DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS AND SCIENCES.

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FARM WORK FOR AUGUST.

"The eighth was August, being rich array'd
In garment all of gold downe to the ground;
Yet rode he not, but led a lovely mayd
Forth by the lily hand, the which was crown'd
With eares of corne, and full her hand was found."

The Roman senate complimented the emperor Augustus by naming this month after him; and through the Romans it is denominated by us *August*. Our Saxon ancestors called it "*Arnmonat*," (more properly *barn-moneth*,) intending thereby the then filling of their barns with corn.

The harvest in England was principally gathered in August; the rye, oats, barley, wheat, peas, beans, &c.; while our great harvest, the Indian corn, is extended into October, and even November.

Although another month of summer is left, its former beauty, youth and freshness have departed, and the withering touch of age may be seen through all the late gay parterre. The number of flowers is sensibly diminished. But that the change may be gradual, as in all things else, there are some still springing into blossom—the polyanthuses, mignionette, capsicums and china-asters. And as a compensation for the loss of our lovely friends, the quantity of fruit is greatly multiplied, the apricots, the peaches, pears and grapes; the wild berries are abundant, and the garden raspberries, currants, thimbleberries, gooseberries and blackberries.

"The garden blooms with vegetable gold,
And all Pomona in the orchard glows,
Her racy fruits now glory in the sun,
The wall enamored flower in saffron blows,
Gay annuals their spicy sweets unfold,
To cooling brooks the panting cattle run:
Hope, the forerunner of the farmer's gain,
Visits his dreams and multiplies the grain."

But we must restrain our Pegasus, and speak for a moment upon what is with most farmers

A Common Error. — Haying is an exciting, as well as an interesting business. All hands turn out early with bright morning faces and cheerful greetings, for it is understood that everybody is to be good-natured while haying lasts! The mower times his sturdy strokes to the blithest notes of the lark, or if near enough to hear them, to the merry plashings of the dasher in the churn. The women catch the inspiration, and sing while they serve up the hot rolls and coffee for the hungry haymakers. Ah! there is real enjoyment in this delightful occupation. A *good* man lives a long while in haying time. And this enjoyment is the reason why he neglects some other things. While the men mowed, the women sang over the rolls and coffee, and the boys were milking and raking, the weeds—knowing they were not watched—grew tremendously. The garden, the corn and potato field, and even the strawberry patch, have been transformed, if not as by Midas' touch into gold, by some other potent power into a forest of weeds. Hasten, then, to exterminate them; if they seed, there is a crop sown for ages. But this after crop is not the only evil; these weeds make immense drafts upon the soil, and thus deteriorate your crop. Better suffer the meadow to remain uncut a day or two, than let the weeds triumph.

Laying down Grounds.—There is no better time than August to plow and lay down old grass land, or to reclaim swamps and meadows. It requires but a single year to change the most incorrigible land into a productive field, if too much is not undertaken at once, and the right process is adopted. The work is usually attempted with plows too light and teams too weak. In trying to gain a sufficient depth, *one* gets broken and the *other* tired, and then comes the contest of doubts whether it will ever pay to reclaim an old meadow or plow deep and subsoil the upland. Well, this is just as the mason operates, who builds a thin, cheap wall, and finds it tumbling down upon himself, perhaps, before he is fortunate enough to get away from it; or the farmer, who erects a cheap house, and in the course of a twelve-month goes to patching and altering, and subjects himself to an expense much greater than it would have been to do the work thoroughly at first. No. In reclaiming lands, the

first care should be to put in plows and teams strong enough to turn a furrow ten or twelve inches deep and cut all small roots, without straining either team or plow. There is no wear and tear of spirit in this, and your good nature will hold out until the last furrow is turned in such an operation. It is cheaper, too, than to haggle with it, fret the team, spoil the furrow, and find the work at length only half done!

When the land is properly plowed, roll it with a heavy roller, spread fine manure freely, and then follow with a light, sharp-toothed harrow, drawn by horses, and urge them to a lively walk. This operation will cut an immense number of roots, and bring the surface into a fine, deep tilth, altogether unlike that effected by a heavy harrow dragged along at a snail's pace by oxen.

There is one point in laying down grounds of sufficient importance to merit a separate paragraph—and that is the *quality* of the manure applied. The smaller the seeds to be sowed the finer should be the manure. It ought to be old, thoroughly decomposed and pulverized; and where such is freely applied and incorporated with the delicate tilth made by the quickly-moved and sharp-toothed harrow, little complaint will ever be heard of grass being winter-killed. In a soil thus prepared, the minute seeds find all things necessary for a quick and healthy germination and rapid growth. The air, light, heat and moisture are admitted in such proportions as the seeds require to give them a sure and early start. Thus by deep plowing, fine manure and thorough cultivation, little or no loss is sustained in seed, while a good crop is quite certain, let the succeeding season be either wet or dry.

Land in corn may be laid down by sowing the seed at the last hoeing and covering it with the hoe or the hand rake. We have laid down land in this way with excellent results.

Budding.—This month is the suitable time for budding apples, pears, peaches, plums, apricots, &c. High and clean cultivation is as necessary in the nursery as anywhere else. The process of budding is familiar to most persons, and has been fully described in our former volumes. It is simple and easy, and all boys on the farm should practice it. Select the best kinds of fruit.

The Garden.—Farmers, generally, are not in the habit of sowing garden seeds in this month—yet if the season be favorable, cabbages sowed now will do well for late autumn and winter use. So will turnips, celery, and lettuce for fall use. Hoe well and suffer no weeds to go to seed.

Seeds.—Look out for your seeds to gather them as they ripen—the birds will do it if you do not. The best turnip, carrot, onion, parsnip and other seeds require daily attention.

Ruta-bagas.—This is an exhausting crop and would undoubtedly be increased and the land sustained by the application of ashes and plaster. According to Boussingault the ruta-baga contains nearly 42 parts of potash out of 100; 13½ of lime, and the same of sulphuric acid.

Professor Johnston states that in a crop of 20 tons or 45,000 lbs., there are 900 lbs. of thick or woody fibre, 4000 lbs. of starch, sugar, gum, 670 lbs. of fat or oil, and 300 lbs. of saline matter.

Army Worm.—Visit your young apple trees, and where you find these worms foraging on forbidden ground, break their thick ranks by turning a platoon of small, arms or fingers, upon them, and make them "bite the dust." They are active now and very destructive, cutting clean as they go.

Cows.—During the hot weather of August, milch cows require much water, and if possible should have access to pure, sweet water at all times during the day. They are something like their owners in one respect, like to drink when they are thirsty, and we do not think it yielding too much to their taste to indulge them in this particular.

For the New England Farmer.

LUSUS NATURÆ.

BY CHARLES SIEDHOF.

On the 6th inst., I noticed two white blossoms on an apple tree in my garden after all the others had fallen off, but was then prevented from examining them. The following day one of my pupils picked one of those blossoms and showed it to me. I was not a little astonished to see, that this blossom was double. It was 2 1-2 inches in diameter; perfectly white and as full as the flowers of the double Oleander (Neriuse Splendeur.) It resembled in its form and structure a Camellia. I found, on examination, the other blossom not quite so full as that one described. Both proceeded from a fruit spur at the very end of a small limb, laden with fruit. I marked, of course, the fruit spur, and shall try to propagate it in some way or other. Should I succeed in this, it would make a beautiful addition to our flowering trees.

Lancaster. C. S.

MACHINE FOR PICKING STONES.

There is no end to inventions. One could hardly believe that the reaping and mowing machines would perform their work until he had seen it done with his own eyes. Then there is the machine for cutting enormous blocks of marble with toothless saws, and for hewing granite with precision and rapidity. And now, after our back has ached over many a thickly-strown field through many a weary day, comes the machine for picking stones. It is a large cylinder on a common axle and cart wheels containing four rows of teeth or lifters. Gearing on the hubs of the wheels and on the ends of the cylinder gives the latter a rotary motion, when the teeth pick up the stones and deposit them in a box. When the box is full, the cylinder is raised and the load carried off and upset as from a common cart. What shall we have next!

For the New England Farmer.

HOW TO STUFF BIRDS.

BY H. F. FRENCH.

MY DEAR BROWN:—In a recent number of the *Farmer*, in reply to a correspondent who asks information on the above subject, you refer to me, as one skilled in the art of *Taxidermy*, and willing to impart knowledge to others. Now there are many things very easily done, by those who *know how*, and yet very difficult to teach by pen and ink, to those who have no idea of the process.

If you doubt the truth of the proposition, sit down some pleasant morning, and describe the process of *editing a newspaper*, so that we can all understand it as well as you!

I flatter myself that I can skin and stuff a bird so that he will look, as the artist said of his portrait, *a little more natural than life*, and enjoy as much of *immortality* as bones and feathers are susceptible of, but whether I can set the process down, so that all your readers can go and do likewise, remains to be seen. I made my collection, of about a hundred New Hampshire birds, between 1835 and 1838, and they remain as perfect as when just completed.

I have delayed answering your correspondent, hoping to find in some printed book directions on the subject, that might save me the trouble of writing, but not one word do I find, and as I had no teacher myself, I dare say that they who have skill in such matters may smile at my awkwardness. To any such, I would say that if they could only see the big Washington Eagle, which looks down from the top of a book-case, with such a patronizing air upon me as I write, ready to lend me a quill *two feet long*, in case of emergency, they would be glad to laugh on *our* side.

As in the case of a duel, the preliminaries are longer than the actual fight, so the preparations for stuffing the bird are the larger half of the work, at least on paper.

ARSENICAL SOAP.

To preserve the skins of animals from putrifaction and from insects, *arsenic* is the substance generally used. Many persons use it in the form of dry powder, as sold at the shops. I have used a preparation, called arsenical soap, made of one-third white bar soap, and two-thirds arsenic, warmed so as to melt together over a slow fire, with an ounce of camphor gum added, just before the mixture cools. It is applied to the skin, *inside* of course, with a brush, like *lather* to one's chin.

IMPLEMENTS.

For tools, a sharp knife with a flat ivory handle, like a budding knife, a pair of cutting forceps, a pair of pincers, and a pair of small tweezers, such as watchmakers use, will be found convenient. Annealed iron wire, of various sizes, according to the victim to be sacrificed, will be required to support the birds, when mounted, and a quantity of *tow* for stuffing. Cotton will not answer the purpose, because, as every girl who ever made a pincushion can tell, it is difficult to thrust even a sharp wire through it.

HOW TO KILL A BIRD.

It is quite an easy matter, to shoot a bird, and most birds *must* be shot, but often living birds are brought to us, and as one would dislike to skin them alive, it is necessary to kill them in a proper and becoming manner. You can easily wring their necks, or cut their heads off, but since feathers are considered somewhat ornamental to birds, this kind of violence will not do. Blood can be easily washed off of *water* birds, but not from *land* birds, so conveniently. *Poison* will not affect birds of prey, such as hawks and the like. I gave my eagle a teaspoon full of *prussic acid*, and instead of dying of it, he seemed rather refreshed.

The scientific mode of murdering the poor innocent creatures, if they are not too large to handle, is *to pinch them with the thumb and fingers under the wings* so as to stop respiration, and as gentle Isaac Walton says, in directing how to put a live frog on to a fish hook, "in so doing, handle him as if you loved him." Byron says, by the way, that Walton was "a quaint, old, cruel coxcomb," and that he deserved to have "a hook in his gullet"—"with a small trout to pull it." If any one objects to having birds killed, he "had better stop," as the Irishman said, "*before he begins*" his collection.

HOW TO SKIN AND STUFF HIM.

Stop the mouth, nostrils and shot holes with cotton, to prevent the flow of blood. Lay the bird on its back, part the feathers on the breast, and cut through the skin from the breast bone nearly to the tail. If the blood flows, use powdered plaster, or something better, if you know what it is, to absorb it. Separate the bone of the wings at the joint, from the breast-bone. Cut off the neck, close to the breast. Separate the leg bones from the body, leaving the bone in the bare part of the leg, and one joint above, and take the body out. Put in some cotton or tow to prevent the skin from sticking together. Turn the neck wrong side out, till you reach the skull, and cut away the neck and enough of the skull bone to lay the brain bare, which is to be removed, as well as the *eyes*, on the inside. Apply the arsenic and stuff the head and neck with *tow*, as you turn it back.

By this time, the subject will have lost all resemblance to the bird *he was*, and it will seem almost as hopeless to make a cabinet ornament of his mortal remains, as to make him fly and sing again, but he will soon improve.

Take a piece of wire about a third longer than the bird, and bend it, so as to form a loop near the middle, and file each end sharp. Thrust one end through the neck and out through the forehead, and the other through the tail. Thrust another down inside of each leg, between the skin and bone, through the sole of the foot, and twist the upper ends round the loop, and wind a thread or some tow round the leg bone and wire inside the skin. These are to support the bird on his perch, and must be firm. Twist another wire, to form a cross with the first, and confine it at the loop, and thrust it under the skin of the wings. This wire, which is to support the wings, may be omitted in very small birds, and perhaps in all, except those which it is desired to put into very *rampant* attitudes, the skin of the wing being strong enough, when dry, to keep the wing in place. Open the skin of the wing underneath, and remove the flesh, and apply arsenic to the bones and skin.

Finish stuffing, and sew up the cut in the skin, and any other accidental holes, with a fine needle and thread; find some sprightly posture in an en-

graving, or imitate nature, if you can, and having smoothed his dress, and arranged him to your fancy, on an artificial stone made of a pasteboard form, sanded, or on a twig, or block, you may consider him finished, except the eyes. These are of glass, and can be procured, of all sorts, in Boston. They may be put in at any time, by moistening the eyelids.

In arranging birds in a cabinet, of course, one will put *the best side out*, just as the ladies put the trimming on the *congregation side* of their bonnets, and there are various other little innocent "tricks of the trade," such as supplying a few feathers from another bird of the same species, or even a wing or leg, if necessary, that will occur to a youth of genius.

As food for reflection to those who see in such pursuits—pursuits which filled the soul of such men as Wilson and Nuttal and Audubon—nothing worthy of the attention of rational men, let me quote, in conclusion, a few lines from Boker's "Calaynos."

"He! why to him the gay are butterflies,
Flitting around a light, of which they die.
He looks on pleasure as a kind of sin;
Calls pastime waste-time. Each to his trade say I.
I heard a man who spent a mortal life
In hoarding up all kinds of stones and ores,
Call one, who spitted flies upon a pin,
A fool, to pass his precious lifetime thus
What might delight you, lady, may not him;
And yet your pleasures argue you no fool,
Nor his grave brows prove a philosopher."

Exeter, N. H., June, 1852. H. F. F.

For the New England Farmer.

THE WEATHER.

Dear Sir:—Enclosed you have a memorandum for June of the degree of heat at sunrise, at 12 o'clock, and at sundown, and occasionally at 2 o'clock, when the heat was unusual.

	At sunrise.	*At 12 o'clock.*	*At 2 or 3.*	*At sundown.*
1	64	78	00	68
2	65	83	00	64
3	68	80	00	69
4	62	64	00	56
5	46	62	00	54
6	42	Frost in low grounds 72	00	60
7	54	76	00	63
8	61	70	00	66
9	65	70. Rain ½ inch.	00	68
10	52	74	00	62
11	45	66	00	60
12	44	Frost in low lands. 70	00	56
13	48	81	00	66
14	51	86	96	74
15	62	80	98	79
16	74	96	00	82
17	73	84	00	72
18	64 Rain ½ inch.	86	88	74
19	64	85	92	72
20	62	88	00	70
21	68	86	00	72
22	64	82. Rain ½ inch.	00	64
23	54	76	00	58
24	48	78	00	64
25	50	68	00	58
26	54	76	00	66
27	54	84	00	68
28	67	86	00	70
29	68	89	00	68
30	65	86. Rain ½ inch.	00	70

You will perceive we have had a little short of two inches of water during the month of June, which is less than half we need to keep as wet as we wish.

We have had a degree of heat which is unusual; the thermometer has been over 80° sixteen days of the thirty. When the degree of heat is so great we want four inches of water, at least, during thirty days. We have not had two-thirds the rain, in Sherburne, that the towns west and north of us have had.

I would remark that my thermometer is kept on the north side of the house, which faces the south, upon the wall of the house, and situated on a rise of land. My thermometer never rises so high in summer, or falls so low in winter, as some in town; the reason, I suppose, to be, the land is higher, but not on a hill.

Should you see fit to publish this record in the *New England Farmer*, it would be convenient for those who get the work bound, for reference.

Respectfully yours,
Sherburne, July 8, 1852. Daniel Leland.

Remarks.—We not only "see fit to publish" the communication of our correspondent, but to express our thanks for an article requiring so much care and attention, and which is in itself exceedingly interesting.

POTASH WATER FOR APPLE TREES.

Major Wheeler, of Framingham, in this State, has apple trees which, for beauty of form and thrift, are not surpassed by any trees we have ever seen. He is an enthusiast about trees; loves them as men do their children, almost, and knows how to cultivate them so as to get a rapid growth and large crops. Well, the Major uses potash water as a wash for his apple trees, of the strength of a pound of potash to a gallon of water. He informs us that he has used this wash with happy results, for more than forty years, and that he was, probably, the first person who introduced it in this vicinity. In a note he informs us that he does not think Mr. Batchelder's trees, recently spoken of by Mr. Coffin in these columns, were injured by the wash, but by the severity of the winter, or from some other cause.

Our attention was called, both last fall and spring, to young apple trees which had been washed with potash water, some of which were dead, and all had the appearance of being seriously injured. It is possible that in some particular condition of the tree, this wash may have a fatal effect which it would not have upon its general condition, but if so, would not a "forty years'" experience with Major Wheeler have hit that peculiar state of the tree more than once?

Will Mr. Coffin be kind enough to communicate to us a more particular account of the trees he mentioned in a former communication? State their age, the manner in which they have been cultivated, the kind of soil in which they grew, and whether there were any indications of injury from the cold, or from any other cause, previous to the application of the potash water. If the potash water "takes off the moss, kills the borers, and promotes the health of the tree," as Major Wheeler and others state, it is an important article. But we need a wider comparison of practice and observation, and must give the subject more attention.

For the New England Farmer.

BIRDS.

BY CHARLES SIEDHOF.

THE ROSE-BREASTED GROSSBEAK.—(Coccothraustes ludovicianus—Loxia ludoviciana—Loxia rosea.

I consider it as a great merit of this highly valuable paper, that it advocates so strongly the protection and preservation of birds. Having been accustomed to devote my attention to ornithology from childhood, I was enabled, while in Germany, to publish a book on the *singing birds* of that country. My object was not so much to improve on the system as to investigate and show the individual characteristics and manners of the species, tribes and genera. For this purpose I was always surrounded by several hundreds of living birds, kept in a suitable room adjoining my study. Two windows, put in the wall between said room and my study, enabled me to watch and observe them carefully. Immediately after my arrival in this country, I resumed this beautiful occupation, and opened a correspondence with the greatest American ornithologists. This may be enough either to justify or excuse my writing on birds.

Last winter I expressed, in a lecture before the Lyceum, my strong conviction that no bird ought to be destroyed but *the birds of prey*, excepting from them the *owls*, which chiefly live on mice and moles. They compensate a hundredfold the damage they sometimes do in the orchard or field by the destruction of myriads of insects and grubs they eat. Is it wrong and unjustifiable to shoot birds for the *sake of pleasure*, what must a man with a sensible heart feel, when he hears the report of guns in the *breeding season?* Parents and teachers, who allow your sons or pupils to kill birds, especially in the months of May, June, July and August, and to deprive the poor young ones of their parents that nurse and feed them, *are you Christians?* Do you not see the extreme cruelty, for which you will have to account some time?—Can *you* bear the thought, that your children should be left to starvation after your death? Can you, who permit that, pray to your God, and hope to find mercy with him, who have no mercy with his creatures? My heart aches in hearing the firing of guns every day in my neighborhood.

Still I have to return to the rose-breasted grossbeak. This most elegant bird is said to inhabit the remote regions of the Rocky Mountains, Canada, Newfoundland, &c. In 1847 I observed a pair at Newton Centre, in a wood between the Theological Institution and the Worcester Turnpike, but could not find the nest. Wilson knows nothing about it; Nuttall refers to Bonaparte, who says, "the nest was built amidst the thick foliage of the forest;" Audubon asserts it was found near the water edge. It is clear in itself, that very little confidence can be placed in such statements. Audubon's merits in his representations of the American birds are far above my praise; as a critical ornithologist, however, he has no great claim, *so far as my personal observations extend.* His imagination was very powerful, and carried him not unfrequently away. It is out of place to prove this *here;* still I *can* prove, that he relies too much on his predecessors, especially on Wilson, whose errors he unhesitatingly repeats, and which he thus corroborates.

After I had seen the pair of the rose-breasted grossbeak, and being at a loss where to find their nest, I wrote to my excellent friend, SPENCER F. BAIRD, then Professor of Natural History in Carlisle, Penn., but could not obtain any information, he being entirely unacquainted with the nest of the bird.

As I have been lucky enough to introduce the rose-breasted grossbeak from the out-of-the-way regions of the Rocky Mountains as a townsman of Newton Centre, so I am so fortunate as to introduce him as a townsman of Lancaster. I not only met with half a dozen of pairs, but succeeded in finding a nest, containing four eggs, on the 24th inst. The voice and song of this bird are superior to all American birds, except the ferruginous thrush, (orpheus ferrugineous;) but living in the depth of the secluded forest, it has hitherto escaped the notice of the ornithologists.

Lancaster, Mass. C. S.

For the New England Farmer.

APHIDES AND ANTS.

MR. EDITOR:—Your relation to your readers is very much like a common school teacher's to his pupils. A teacher is supposed to know everything, and to be able to explain everything to the satisfaction of his pupils; and, moreover, they feel, that they have a perfect right to go to him for an explanation of all difficulties in relation to their studies, whether he has leisure to attend to them or not.

Now, what I want to know, is, what connection (if any) exists between the *aphis* and the *ant?* On all my best fruit trees, the most vigorous and thrifty ones, the aphides abound; and a multitude of ants are daily seen running up and down in a great hurry. On the extremities of all the tenderest twigs, the two may be seen in close connection, if not in direct contact, busily doing something, what, I cannot tell. If I disturb the ants in their operations, they immediately assume a belligerent aspect, appear to be in a great fury and ready for fight. They seem determined to stand up in their own defence, and to let me know, that they do not mean to be disturbed with impunity, while they are minding their own business and not interfering with the rights of others. Now, I wish to know, also, whether there is any *lawful*, cheap and easy way of putting a stop to their operations on large fruit trees? If, however, you shall make it appear that the *ant* subsists upon the *aphis*, I should not think it best to issue a *writ* of *injunction*.

MOUNT GRACE.

Warwick, July 12, 1852.

REMARKS.—If more attention were given to the organic life about us on the farm, or, indeed, to all the wonderful operations of nature with which we are concerned, there would be less dissatisfaction with rural life, while the mind would be gradually filled with the most pleasing and useful information. We thank "Mount Grace," not only for the observations he has made, but for communicating them to us. His queries introduce a subject most intensely interesting, a better knowledge of which would be profitable were it only for the gratification imparted to an inquiring mind.

On the tender shoots of the young apple trees,

the points of the branches which have grown the present season, most persons have undoubtedly noticed numbers of a small green insect, and in company with them and very busily engaged, numerous black ants, travelling back and forth as though they were engaged on some important mission. The green insects, or aphides, we have examined under the microscope, and found the hour devoted to them most happily spent. In addition to the antennæ, or feelers, we found on these insects two beautiful brushes, or feathers, projecting nearly perpendicularly from the top of the head, and movable in any direction. On the extremity of the body were two black tubes, blunt like the end of the fore-finger, of the use of which we had no sort of idea at the time of the examination. In taking a common pocket magnifier to the tree and watching through it the movements of the ants, we found them licking or feeding upon something which always seemed to be present where the aphides were. And this, undoubtedly, is the fact. We are happy, however, to yield the imperfect description which we should only be able to give, to one better versed on these subjects than we can ever hope to be. In the work on Insects injurious to Vegetation in Massachusetts, in Professor HARRIS' lively and attractive style, we find the following interesting relation; and for which we feel confident our readers will be no less thankful to the writer than we are ourselves:—

"The genus to which plant-lice belong is called *aphis*, from a Greek word which signifies to exhaust. The following are the principal characters by which they may be distinguished from other insects. Their bodies are short, oval, and soft, and are furnished at the hinder extremity with two little tubes, knobs, or pores, from which exude almost constantly minute drops of a fluid as sweet as honey; their heads are small, their beaks are very long and tubular, their eyes are globular, but they have not eyelets, their antennæ are long, and usually taper towards the extremity, and their legs are also long and very slender, and there are only two joints to their feet. Their upper are nearly twice as large as the lower wings, are much longer than the body, are gradually widened towards the extremity, and nearly triangular; they are almost vertical when at rest, and cover the body above like a very sharp-ridged roof.

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"Plant-lice seem to love society, and often herd together in dense masses, each one remaining fixed to the plant by means of its long tubular beak; and they rarely change their places till they have exhausted the part first attacked. The attitudes and manners of these little creatures are exceedingly amusing. When disturbed, like restive horses, they begin to kick and sprawl in the most ludicrous manner. They may be seen, at times, suspended by their beaks alone, and throwing up their legs as if in a high frolic, but too much engaged in sucking to withdraw their beaks. As they take in great quantities of sap, they would soon become gorged if they did not get rid of the superabundant fluid through the two little tubes or pores at the extremity of their bodies. When one of them gets running-over full, it seems to communicate its uneasy sensations, by a kind of animal magnetism, to the whole flock, upon which they all, with one accord, jerk upwards their bodies, and eject a shower of the honeyed fluid. The leaves and bark of plants much infested by these insects are often completely sprinkled over with drops of this sticky fluid, which, on drying, become dark colored, and greatly disfigure the foliage. This appearance has been denominated honey-dew; but there is another somewhat similar production observable on plants, after very dry weather, which has received the same name, and consists of an extravasation or oozing of the sap from the leaves. We are often apprized of the presence of plant-lice on plants growing in the open air by the ants ascending and descending the stem. By observing the motions of the latter we soon ascertain that the sweet fluid discharged by the lice is the occasion of these visits. The stems swarm with slim and hungry ants running upwards, and others lazily descending with their bellies swelled almost to bursting. When arrived in the immediate vicinity of the plant-lice, they greedily wipe up the sweet fluid which has distilled from them, and, when this fails, they station themselves among the lice, and catch the drops as they fall. The lice do not seem in the least annoyed by the ants, but live on the best possible terms with them; and, on the other hand, the ants, though unsparing of other insects weaker than themselves, upon which they frequently prey, treat the plant-lice with the utmost gentleness, caressing them with their antennæ, and apparently inviting them to give out the fluid by patting their sides. Nor are the lice inattentive to these solicitations, when in a state to gratify the ants, for whose sake they not only seem to shorten the periods of the discharge, but actually yield the fluid when thus pressed. A single louse has been known to give it drop by drop successively to a number of ants, that were waiting anxiously to receive it. When the plant-lice cast their skins, the ants instantly remove the latter, nor will they allow any dirt or rubbish to remain upon or about them. They even protect them from their enemies, and run about them in the hot sunshine to drive away the little ichneumon flies, that are forever hovering near to deposit their eggs in the body of the lice."

HILLSBOROUGH COUNTY FAIR.

The Annual Exhibition of the Hillsborough Agricultural Society will take place at Nashua, N. H., on the 29th and 30th September next. The editor of the *Granite Farmer* says "the influence of the previous fairs of the society are readily to be seen in the improved cultivation of farms and in the introduction of improved breeds of cattle and horses." The Hillsborough Society has a vitality about it which would prove beneficial to many other similar associations. Like merchants and manufacturers, they consider a day devoted occasionally to the discussion of their affairs as profitably spent, and consequently continue their meetings beyond the winter months. May we all profit by the good example they afford us.

For the New England Farmer.

GENTLEMEN:—The accompanying communication, from the *Cirencester and Swindon Express*, although written for the edification of our friends on the other side of the "*big pond*," may, perhaps, contain some hints of importance to their neighbors on this side. The relation which the veterinary art bears to a successful system of agriculture is too important to be overlooked by the American people,—a nation of agriculturists, and I sincerely hope that the subject may receive that attention which its importance demands.

Respectfully yours,

GEO. H. DADD, *V. S.*

THE PRESENT CONDITION OF VETERINARY MEDICINE,

IN ITS RELATION TO AGRICULTURE.

There is a short sentence in the English tongue of talismanic character in the minds of many of the present day—"Practical experience." What is it? The words are simple, but widely significant; extensive in their application, but too commonly confined to those who least of all deserve them. With the public they are the "*sine qua non*," the acme of attainable greatness. Truly, as our facetious contemporary, *Punch*, remarks, "truly we are a practical people. Our naval architects launch a frigate; she floats too much by the head, so we cut down her stern. Then she floats too much by the stern, so we take off her figure-head. Then she is found to be over-masted, and we put in lighter masts. Then it is found she can't carry canvass enough, and we take them out again. Then she rolls too much, and we increase her ballast. Then her lower deck ports are under water, and we plug them up. Without her lower tier she does not carry metal enough, so we clap two sixty-fours at her bow and two sixty-fours at her stern. Then she will not make any way at all, and we are forced to begin all over again; and the account concludes with an awful bill to pay.". We should be sorry to underrate the importance of "practical experience," even to admit a question of its imperative necessity; but does it never occur to its most enthusiastic supporters, that a man may spend his threescore years and ten, practising all the time in the wrong direction? Science is an accumulation of facts and principles deduced from them, the products of numberless experiences. Is it not then obvious that the man who commences to practice without making himself first familiar with the practice of those who have gone before him, is attempting, single-handed, what thousands combined have hardly accomplished? Of what value are a few isolated facts, unless they illustrate or indicate a principle? Every fact is but an example of some operating law; to be contented with the fact alone, to trust solely to "practical experienc," is the characteristic of the empiric, the quack—not of the man of sense.

Was it by trusting to "practical experience" that Galileo discovered the motions of the planetary system? Ages of practice had not enlightened his predecessors. Was it by adherence to a mere physical fact that Newton recognized the force of attraction? The phenomenon which roused his giant mind was familiar to every schoolboy. Was it by trusting to "practical experience" that our glorious countryman Harvey, discovered the circulation of the blood? His progenitors had practised for centuries, and still remained in ignorance. In all these cases the reasoning faculties of the educated man were called into energetic action; the facts were observed and noted, and further, their causes were sought out, the laws which governed them were analyzed, until unlooked-for and startling consequences became apparent. From the circumstance of a falling apple was deduced the force that regulates the universe:—such is science! that science which people mock and oppose. Then talk kindly of uniting with "practice!"—"science with practice!"—as though some new combination must be effected—as though science should be honored by the union, instead of looking on practice without science as a monster that dared not show its front in civilized society.

If under any conditions it is necessary to possess knowledge—correct and systematic knowledge—surely it must be where the complicated organism of the animal body requires regulation; if ever practice based on imitation become positively criminal, it must be where its rude hand is applied to repair a machine of whose construction it is profoundly ignorant, or of whose functions it retains no conception. With the most learned, success in the treatment of disease is not too frequent; how must it be with the ignorant? The untiring in the pursuit of knowledge are fain to confess that much is still beyond their ken; the man who combines all the requisites of his art observes with pain, that his remedies too often fail; what shall we say of him who, armed with his musty prescriptions, the property of his father's father, strong in an experience of twenty years spent in the pursuit of error, rashly offers his assistance? How true it is, that "fools will rush where angels fear to tread!" But we are told, the man is frequently successful; of course he is; animals will live sometimes in spite of all we can do to prevent them. We know instances where exposure on a frosty night has cured a dying horse of inflammation of his lungs; but a cold night is not therefore hailed by practitioners as a sovereign remedy. A case is recorded where an unsuccessful blow from the knacker's pole-axe restored an animal suffering from the last stage of lock-jaw; but concussion to the region of the brain is not at present much in favor as a curative agent for that disease. Because a case recovers under a certain plan of treatment, it by no means follows that the remedy is discovered; it is only by the aggregate of results that any reasonable conclusion can be arrived at.

What a significant tale is told by the records of animal mortality. Examine the slaughterman's receptacles in the neighborhood of populous cities; find that in one yard alone an average of three hundred horses per week, for months in the year, is not considered remarkable; pursue the inquiry, and learn the vicious system of management that leads to this; observe how much science is mixed up with it; note how far the science of ventilation is carried out; see how the food is proportioned to the digestive functions; question the amount of knowledge of the influence of noxious gases on the respiratory organs; and then answer why has "practical experience" tolerated all these evils, till they threatened universal destruction?

The preservation of health must, in the mind of the true follower of his art, stand infinitely higher than the cure of disease; it may be adverse to his

interest, to the interest of the profession to which he belongs, but the argument is childish, if nothing worse, that protests against the advantage of the many being consulted at the expense of the few. If the ultimate object of medicine be to support those who practice it, it becomes the duty of every one of its professors to help the people in ignorance; the man who expounds the functions of digestion to the masses becomes a dangerous member; the individual who insists on ventilation, a traitor to his cause. The total eradication of disease is synonymous with the annihilation of medicine; nevertheless he is no true disciple who does not aim at such an end. We are glad to quote from an opening lecture delivered by Professor Spooner in 1849. Speaking of the contract system, he remarks, "The further this system is carried, the more it will lead to a very broad development in both the veterinary and medical professions—public health, as maintained by the adoption of prophylactick measures, is that to which I allude; and the preservation of health ought, I think, be considered by us as a nobler art than the cure of disease. The rapid strides which agriculture is making, in the draining of lands, the knowledge of crops, &c., all lead to this consideration. The flocks and herds that adorn our landscapes, are as much crops as far as their growth is concerned, as are the ears of wheat or blades of grass that flutter in the breeze. An extension of the same science that fattens the corn will fatten the cattle. The vegetable kingdom, also, has its diseases and its cures, equally with the animal; but it is art and science on a large scale alone that can, by combatting with the one, furnish the other. I look upon the veterinarian as the inseparable companion of the farmer, in the grand matter of the preservation of the health of his live stock; and the contract system must ultimately, I think, lead to his being paid rather according to the health, than according to the disease of the animals placed under his care." It is to the scientific investigator, not to the cowleach or the farrier, that the agriculturist must look for the attainment of so grand an object. We trust the prediction of Professor Spooner will, ere long, be fulfilled.

Up to the present we have dealt with generalities, which, though useful, are not sufficient. If they are not easily opposed, they may be to some not convincing; our subject requires us to enter into details—to expose, by reference to constantly recurring instances, the mal-practices of those who professing to alleviate animal sufferings, do frequently but contribute to its increase.

For the New England Farmer.

A COW POISONED BY DOGWOOD.

Mr. Brown:—In June, 1851, one of my cows went from the pasture among the bushes that line the road from my place to Still River. The following day, her eyes began to swell; the third day her whole forehead was covered with ulcers and scurf. She did not seem to suffer much; still, not knowing what to make of it, I consulted a man who had the reputation of being a skilful veternarian. Although he confessed that he had never seen anything similar, yet he concurrred with me in the opinion, that the cow was poisoned. The day after, I found an abundance of dogwood in the place where the cow was found. The swelling yielded to soft washings and laxative medicines. Farmers should make it a point to destroy the dogwood which grows so luxuriantly and abundantly in wet meadows. Would it not be well in schools to make the children acquainted with it? There are but *very few* that know it, and I could give proofs from my own experience, how dangerous it is, not to know such an enemy.

Lancaster. Charles Sidnor.

GROWING TREES FROM CUTTINGS.

There are a great many things left yet, we are confident, that our philosophy has never dreampt of. Last spring we tried the Bohemian method of inserting cuttings in potatoes—but the vital fluid never ascended into the cuttings, and instead of a crop of trees, we shall get a crop of potatoes. We intend to try the suggestions given below; the experiment will be a cheap and simple one, and in relation to every similar experiment we would say to the reader "go, thou, and do likewise."

A French gentleman, named Delacroix, has discovered a new mode of propagating trees from cuttings, which has proved successful for apples, pears, plums, apricots, &c., as well as for roses and other plants that are tenacious of life. This method is to bend the cutting in the form of a bow and to put it in the ground at the two extremities, leaving only the middle part exposed and on a level with the surface of the ground. There must at that point be a good bud or shoot. All other parts being protected by the earth from drying, give vigor to the bud, which is soon transformed into leaves, by which in its turn it draws from the atmosphere the carbon necessary to the formation of the roots. The method of planting is to form two ridges, and placing the cuttings across the furrow between, cover the ends with earth, press it upon them, and water freely. The cuttings should be of last year's growth.

TOMATOES.

Those who wish to hurry their tomatoes for market, may do so by proper shortening-in at this time. All must have observed that 90 per cent. of the tomatoes grow within 18 inches of the ground, and that ninety per cent. of the vine, containing only ten per cent. of the fruit, grows above this point; therefore cut it off and remove it with the small tomatoes. The vines will not bleed, and the large tomatoes left will increase in size more than equal the value of those removed, besides getting them in market while the price is sufficiently high to compensate for their culture.—*Working Farmer.*

Remarks.—Try this and ascertain whether Professor Mapes is right.

Warts on Plum Trees.—In the warts on the plum twigs left with us by a gentleman a few days since, we see nothing differing from their usual appearance. Lying by us for a week, they are now hard and black. The softness and green color which they presented we have often noticed on young trees standing on rich ground and having a luxuriant growth.

SUMMER ROSE APPLE.

Above we give a portrait of the Summer Rose apple. Mr. Downing says it is a very pretty and very excellent apple, highly esteemed as a dessert fruit. It has not come into general cultivation yet, but is gaining friends.

The fruit is small; roundish; pale yellow, striped and marbled with red; tender, sprightly, pleasant flavor. Later than Early Harvest; smaller and less productive. Adapted to the private garden, for which it is fine. Ripens early in August.

For the New England Farmer.

TWENTY PIGS AT A LITTER.

MORE TRUTH THAN POETRY.

Mr. Brown:—In penning you this note, it is not my object to test your credulity, or stagger your belief in the marvellous, but simply to give publicity to a fact worthy of communication.

In these days of clap-traps and humbugs, when "spiritual knockings" and "fire annihilators" attract more attention, or rather seem of more importance than the science father Adam taught us, it seems best for an editor, as well as his readers, to masticate well their food for belief, before allowing it to pass into their minds for digestion. The following fact, however, comes too well authenticated, to need the oath of your obedient servant. Mr. Edwin Abbott, of Westbrook, in this county, has a sow, (of native breed,) which gave birth to *twenty pigs at one litter* on the 23d day of June! Comment is unnecessary. If you have any "Suffolks" in Massachusetts that will rival this Yankee specimen, on *breeding*, let us know it, and we won't tell any more hog stories.

Honestus.

Mechanic Falls, Me., June, 1852.

For the New England Farmer.

PRACTICAL SUGGESTIONS.

It is a fact, the importance of which is not sufficiently estimated, that the circumstances in which we have hiterto been placed have exerted upon our minds an influence either of a beneficial, or of an injurious tendency. As objects in outward nature produce impressions of an agreeable or disagreeable kind upon the senses, so the particular events which have occurred in our individual history, and the scenes with which we have been more especially conversant, have operated strongly in the formation of the character which we now respectively sustain. To man, in every station of life, the world has been a school in which his faculties have been trained and educated. The varied aspects which, in our limited sphere, it has presented, the manifold and singular vicissitudes, of which to us it has been the theatre, have all contributed to give a color and direction to our feelings and desires, and to help on, or retard, the improvement of our condition. Meanwhile time has never for a moment been stationary upon us.

Perhaps no class of individuals, whose pursuit is labor, have so much leisure during the whole year as the farmer. Except at a few seasons of the year his labor is so diversified, that at the close of the day he is prepared to pursue mental culture with a good degree of vigor. As a general thing, how many hours of leisure has the farmer which may well be appropriated to the acquisition of some useful information. Waste of time! If for every idle hour a man had to pay a small sum of money, how few idlers would be found loitering over the grounds! Yet time is money, and of much more consequence generally speaking than money. There is no part of the year in which the husbandman may not be usefully employed in improving his land. How much can be done in win-

ter, in clearing ground, taking manure from the barn and other places, and sledding it over meadow lands which cannot be passed when the ground is not frozen.

A year's supply of fuel should be procured, and fitted for use and housed by the first or middle of March. Let some time be appropriated in collecting broken and decayed wood and underbrush from the forest before the snow covers the ground in the autumn, and early in the winter, and when the ground is covered with snow, let this wood be hauled and fitted for the fire, and well housed, for wood is much better seasoned, without being exposed to the weather.

In like manner can preparations be made for building stone wall. Let the stones be dug and laid in heaps at a convenient distance before the frost enters the ground, and when the snow covers the earth let them be taken to the place where you wish to build your wall without any injury to the land.

Portable fence is of great convenience on a farm. This can be made at any leisure season, and be kept under cover till wanted for use. How convenient to have a few acres enclosed for a short period only, where a permanent fence would be a great inconvenience. Pasture grounds are much better divided in small enclosures, than to give the cattle too much range, where they are apt to waste the feed early in the season, and as the drought of summer comes on, the early grown grass is trodden down, and therefore much feed is wasted from not having the ground early fed. Better let a portion of pasture land be early mowed, then the second growth of grass will be readily eaten by the cattle.

These desultory remarks, Messrs. Editors, have been thrown together without any particular reference to time or season, and may be useful to some young agriculturist, not as being particularly new, for we most of us need to be reminded of our duty, or of what we already know. H. E.

Andover Horticultural Society.—We learn that some of the enterprising citizens in the old and beautiful town of Andover, Mass., have had a meeting preliminary to the formation of a horticultural society in that town. Interesting addresses were made by Mr. S. S. Young, Mr. John Aiken, and others. The following gentlemen were appointed a committee to report a constitution and by-laws for the government of the society, and call another meeting:

S. S. Young,	David Middleton,
E. Sanborn,	George Foster,
Geo. Cruickshanks,	—— Clark,
—— Dennet,	N. Morton.
Rev. Mr. Loring,	

Extract.—"In looking over the *Farmer* of last week, I see you take notice of the cold summer of 1816. This brings to my mind what an old lady in North Andover told me a week ago. 'On the 16th of June, 1816,' she said, 'one of her daughters went out to drop potatoes, and it was so cold she had to wear a cloak, hood and mittens.'

Yours, Subscriber."

REPORT

FROM THE WORCESTER COUNTY SOCIETY, ON FEEDING STOCK.

[concluded.]

It is understood that a man with a fair hand cutting machine can easily cut during any of the short days of winter a ton of hay, and not have a hard day's work at that.

Those who have large stocks of cattle will find it profitable to make use of some animal power, (horse or ox,) to aid in cutting their food for them. The same power may be used in cutting vegetables, sawing wood, &c. The quantity of food required for the support of cattle, as established by these experiments, although no greater than is stated in some agricultural publications, is believed to be considerably larger than has been usually estimated by the farmers in this vicinity. The steers of Mr. Dodge requiring but little for additional growth, beyond their support in good condition, consumed in hay, or its equivalent, daily, not less than 2 per cent. of their live weight. The dry cows of Mr. Demond, for their own support and for the support of the calves with which they were pregnant, demanded for their food an amount of hay, or its equivalent, equal to 2 1-3 per cent. of their live weight, and this proportion would be constantly increasing until they dropped their calves. The cows of Mr. Lincoln required a sufficiency of food for their own support, the supply of milk they were giving, and the sustenance and growth of the calves within them, of which they would be delivered at different periods. The one consumed of food, or its equivalent in hay, 2 4-10 per cent., and the other 2 4-5 per cent. of their live weight. Of the oxen referred to in the trial by Mr. Hawes, they required more food in consequence of their being employed in labor instead of being at rest, and more in consequence of being exposed to the inclemency of the weather for a part of the day instead of being in the barn protected from the cold. The consumption of food by them was 2 4-10 per cent. of their live weight.—These facts are important for the information of every farmer, that he may be enabled to calculate with more precision whether he has sufficient sustenance for his stock through the winter, making a liberal allowance for a late spring. No man can afford to stint his stock in their food. Should he, at any time, have reason to fear that his supply of hay, straw, &c., may be insufficient to carry his stock well through the season, it will be far better for him to sell a part at a reduced price, or even to give them away, than to allow them to become poor. An ox or a cow, poor in the spring, will require nearly the whole of the summer months in good feed to recover its condition, and its use be of little benefit to the owner. With young cattle, to be stinted in their growth through poverty is an irreparable injury.

Of the manner adopted by Mr. Dodge in the care of his steers, the committee cannot approve. After the first week they were confined wholly within the barn, without being allowed to go out for drink or for air and exercise. They were fed twice each day, and had water given to them but once each day. That cattle closely confined will take on fat more readily, is undoubtedly true, but in this instance the tendency to increase in flesh

was counteracted by their not being fed and watered so frequently as they should have been.—Cattle should have food with much regularity at least three times a day, and during the long winter nights, particularly where the barn is so conveniently located with reference to the house as is that of Mr. Dodge, a fourth time (in the evening) would be preferred. Where the food for twelve hours is laid before the animal at one time, the quantity is so great that much of it is necessarily blown upon for a considerable time, and is not afterwards readily eaten. An animal deprived of drink twenty-four hours would become quite thirsty, and would, when allowed to drink, take into the stomach a large quantity of water, which would occasion suffering, both from the coldness, until it became warmed by the internal animal heat, and also by the distension of the stomach which it would occasion. It has been found that when cattle can drink at pleasure, they drink often, and in small quantities. It is desirable to conform to the natural habits of our animals, so far as is practicable. This mode of feeding, as applied to the steers, is not the manner Mr. Dodge would adopt for his whole stock, or which can be recommended to farmers to pursue. The statement of Mr. Dodge contains much valuable information, not only in relation to feeding, but also as to the amount of the solid manure voided by the cattle in proportion to the hay consumed, which it is important should be more generally known by farmers; and to this the liquid manure is to be added, in order to estimate the loss occasioned to a farm in selling off the hay and straw grown upon it.

The Committee, after having carefully considered the several statements of the different competitors, have awarded the first premium of $30 to Wm. S. Lincoln; the second premium of $20 to Amherst H. Hawes. As to the statement of Mr. Hawes, the Committee had at first some doubt whether it was proper for them to take it into consideration, he not having complied with all the requirements of the society, in having failed to give the average of the temperature in the barn as indicated by the thermometer. Upon further examination, they found that the two oxen stood side by side when in the barn, and when out, worked side by side in the yoke, and were therefore "constantly in the same temperature," and equally affected by the warmth or cold to which they were exposed, the average degree of which could only be given as to the barn. It would therefore be very imperfect as applied to this case. That the cold to which they were exposed, the average of which could not be given, had an important bearing upon the amount of food required for the support of the cattle, and the uses to which that food must be applied, the Committee did not doubt; and adjudged that they had been furnished in this case with all the information of which they could have availed themselves; that the omission could not have had any influence in their decision; and that they would therefore receive the statement as a substantial compliance with the conditions imposed for the trial, and consider it accordingly.

The Committee would fail in the discharge of their duty, did they omit to express their strong disapprobation of competitors assuming to decide whether the regulations of the society are judicious as applied to their case, and non-complying with such rules as they do not approve: that is a question not submitted to them; they should strictly comply with all the requirements, and furnish the desired information to be used in such manner by the judges as in their discretion they may think proper.

The duty of the chairman was very easy, as the decision of the Committee was made without the necessity of an expression of an opinion from him. He would, however, add, that he fully concurs with them in the result to which they arrived.—He was charged by his associates with the duty of expressing to Messrs. Demond and Dodge their thanks and those of the society they represent, for the time and trouble they have devoted to the attainment of information which they believe to be highly valuable to the agricultural community, and from which they hope these gentlemen will derive benefits which will more than compensate them for the inconvenience these experiments have occasioned them.

In relation to the relative value that straw, turnips, carrots and Indian corn meal bear to good hay, the Committee have preferred to use the tables adopted by distinguished writers on agriculture, than to rely on their own opinions. They are, however, strongly impressed with the belief that in this case the value of carrots and corn meal, particularly the latter, is estimated too low, and this opinion receives confirmation from the result of the experiments of Hon. John Brooks. Had they adopted their own estimates of the value of these articles, the awards would have been the same.

All which is respectfully submitted,
By order of the Committee,
JOHN W. LINCOLN, *Chairman.*

STATEMENT OF CHARLES B. DEMOND.

To the Committee of the Worcester County Agricultural Society on Feeding:

GENTLEMEN:—Not being fully satisfied in my own mind as to the advantages or disadvantages of cutting hay as food for stock, I was encouraged by the society's premium to try an experiment. The following are the results. The trial was made with two cows, each 7 years old, of native breed and ordinary size; they were dried about the 10th of December, and kept during the month on coarse fodder, meadow hay, oat straw, &c. On the first day of January the experiment commenced. No. 1 calved the 4th day of March, 1851. No. 2 calved the 28th of February, 1851. Both cows are expected to come into the dairy on the 9th of March, 1852; they were fed on dry hay, with one-half peck of turnips per day.

No. 1.

Fed on cut hay, First 2 weeks,	Weight 870 lbs. Hay eaten 316 lbs. Gain in weight 24 lbs.
Long hay, Second 2 weeks,	Weight 894 lbs. Hay eaten 284 lbs. Gain in weight 12 lbs.
Cut hay, Third 2 weeks,	Weight 906 lbs. Hay eaten 295 lbs. Gain in weight 14 lbs.
Long hay, Fourth 2 weeks,	Weight 920 lbs. Hay eaten 279 lbs. Gain in weight 11 lbs.

Gain during the trial 61 lbs.

No. 2.

Fed on long hay, First 2 weeks,	Weight 850 lbs.
	Hay eaten 298 lbs.
	Gain in weight 17 lbs.
Cut hay, Second 2 weeks,	Weight 867 lbs.
	Hay eaten 308 lbs.
	Gain in weight 17 lbs.
Long hay, Third 2 weeks,	Weight 884 lbs.
	Hay eaten 288 lbs.
	Gain 16 lbs.
Cut hay, Fourth 2 weeks,	Weight 900 lbs.
	Hay eaten 252 lbs.
	Gain in weight 9 lbs.

Gain during the trial 59 lbs.

During the third week of trial, No. 1 was accidentally hooked by another animal in the abdomen, which I think must have caused her pain, and she did not do as well perhaps as she otherwise would have done. No. 2, during the last week of trial, did not appear to have so good an appetite as usual; the hay was a little finer, and when cut, she did not relish it as well. The hay used was a mixture of Timothy and Red Top, about equal.—The animals were kept in the barn all the time, (excepting being turned out to water twice a day,) at a temperature averaging 41 degrees. The turnips were fed to them in common with my other cattle in the morning. The cows are not fat, but in what would be called very decent order. The time of weighing was in the morning, and before they had drank. Changing the cows from poor to good hay will account perhaps for their consuming more hay, and gaining more in weight during the first period of trial than afterwards. The hay was weighed and the animals fed by myself, and I have endeavored to be as accurate as possible.

CHARLES B. DEMOND.

Grafton, March 2, 1852.

STATEMENT OF HARVEY DODGE.

To Hon. John W. Lincoln, Chairman of Com. on Feeding:

SIR:—The two animals on which I have been experimenting for eight weeks during the last winter, and on which your premium is claimed, are a pair of half-blood North Devon steers, two years old past, or three years coming, dark red color, well built, and very similar in all respects to each other. From 10 to 35 lbs. in weight is the greatest difference in the two, at any time, for four months past. No difference in keeping has been permitted, at any time, to grow one faster than the other. They came from the pasture the first of winter in good condition, and were fed on good hay, corn fodder, and half a bushel of flat turnips per day, to the 4th of January. They were then put into a close stable by themselves, one tied eight feet from the other; boxes or close cribs were so fixed that it was impossible for them to waste their own, or get each other's food. Water was given them in the stable, and they were not permitted to go out of the stable except to be weighed once in two weeks, and one *day* for *work*, and this was during the first week of my experiment, and will show, conclusively to my mind, why they fell off in weight during the first two weeks. They had been unaccustomed to the yoke and confinement in the stable, and being very ambitious, worked beyond their strength and evidently did not recover themselves before the end of the first two weeks. Their food was regularly given them at 8 o'clock in the morning, and 4 in the afternoon, and feeding was permitted after the first week only at these two stated times. After the first week, water was given but once a day, (at noon;) though repeatedly offered at other times, it was generally refused after the first week. A full bucket of water was weighed and the number minuted, and the fractions weighed back and minuted, and an average taken at the end of each two weeks; a thermometer was kept during the eight weeks, centre ways between where the steers were tied, in a box for the purpose fastened to the scaffold floor, and consulted at 8 and 4 o'clock, (feeding time,) the degrees minuted and an average taken at the end of each two weeks, being weighing day. The quality of hay was an average of what is cut on my farm,—about equal portions of herdsgrass and red top, with a small quantity of clover mixed. A half-bucket of water was sprinkled on to their hay, both cut and uncut, after being put into their crib, and the meal sifted on to the wet hay at each feeding, (morning and evening,) which feed was generally consumed before the next feeding time; if not all consumed, a less quantity was placed in the box for the next meal, though they experienced no want of more food at any time during the trial than what they received; in short, they had enough and no more. The nigh steer would have preferred long or uncut hay to cut, while the off steer seemed to prefer cut feed from the very commencement, and so continued through the different times he was on this feed; and this circumstance accounts conclusively to my mind why the off steer took on a greater share of weight during the times he was on cut feed; and the nigh steer made his greatest weight on long feed, (owing to his disrelish for cut feed, neither being accustomed to cut feed before this experiment,) though I have no doubt but what he would have become as fond of cut feed as the off one in a short time, as most all animals do prefer cut to uncut, after being accustomed to it. I give below a statement of the different experiments, which were made with great care, and recorded at the time.

Experiment No. 1, *commenced Jan.* 3, 1852.

Jan. 3. Nigh steer weighed 1075 lbs., cut hay 194 lbs. and 2 qts. of corn meal per day, making 28 qts. for 14 days. Temperature average past two weeks 28 degrees above.

Off steer weighed 1080 lbs. Long hay consumed 222 lbs., and 2 qts. of corn meal per day. For the last two weeks average temperature 28 deg. above; water drank by the pair after returning from weighing, 60 lbs.; average for the two, 70 lbs. per day during the trial.

Experiment No. 2, *commenced Jan.* 17, 1852.

Jan. 17. Nigh steer weighed 1065 lbs.; consumed 215 lbs. of hay uncut, 2 qts. of meal per day for the last two weeks; temp. 18 deg.

Off steer weighed 1050 lbs.; cut hay 215 lbs., meal 2 qts. per day; temp. 18 deg.; the two steers drank after weighing 93 lbs. water; average water for 14 days, 74 lbs. per day.

Experiment No. 3, *commenced Jan.* 31, 1852.

Jan. 31. Nigh steer weighed 1090 lbs.; cut hay 253 lbs., 2 qts. meal per day; temperature 32 degrees for the last two weeks.

Off steer weighed 1070 lbs.; uncut hay 258 lbs. consumed and 2 qts. of meal per day; temp. 32 deg.; water drank after being weighed 63 lbs.; average water for the two weeks, 70 lbs. per day.

Experiment No. 4, commenced Feb. 14, 1852.

Feb. 14. Nigh steer weighed 1095 lbs.; uncut hay 254 lbs., 2 qts. meal per day, temp. 37 deg., water drank after weighing 33 lbs.

Off steer weighed 1105 lbs.; consumed 254 lbs. cut hay, 2 qts. meal per day, temp. 37 deg. above, water drank after weighing 43 lbs.; average water drank by the two steers 79 lbs. per day for the last two weeks.

Feb. 28. Nigh steer weighed 1125 lbs., water drank after being weighed 32 lbs.

Off steer weighed 1160 lbs., drank 36 lbs. of water after being weighed.

It will be seen by reference as above that 949 lbs. of long hay was consumed, and 916 lbs. of cut, making a difference in favor of cut feed of 33 lbs. of hay. In experiment No. 1, the nigh steer on cut feed lost but 10 lbs., while the off steer on long feed lost 30 lbs. In experiment No. 2, nigh steer gained 25 lbs. on long, and off steer gained 20 lbs. on cut. In experiment No. 3, nigh steer gained 5 lbs. on cut, and off steer 35 on long. In experiment No. 4, nigh steer gained 30 lbs. on long, and off steer 55 on cut, showing the whole gain, after taking out the loss on experiment No. 1, to be 130 lbs.; 70 lbs. of this gain was made by cut, and 60 lbs. by long feed,—showing a difference in favor of cut feed over uncut of 33 lbs. of hay and 10 lbs. of live weight.

Sutton, March 15, 1852. HARVEY DODGE.

STATEMENT OF WILLIAM S. LINCOLN.

[Mr. W. S. LINCOLN presented a long and carefully prepared table, which being in rule and figure, we cannot make it convenient to copy.]

It is necessary, in order to comply with the rule adopted for the trial, to add a few particulars.—The trial was made with two cows. One, Beauty, calved on the 14th day of June last, and is expected to come in on the last day of June, having been served the 30th day of September last. She is 1-4 Ayrshire, was raised by myself, and will be 4 yrs. old the 13th day of May next. The other, Cherry, calved on the 20th of June last, and is expected to come in on the 14th day of May next, having been served on the 4th day of August last. She was purchased by me, is said to have some Devon blood in her, and is also 4 years old this spring. At the commencement of the trial both animals appeared to be in good health, but before the first period of trial had passed, Cherry showed symptoms of disease. Her disease was the "Horn ail." I think a check was put to the disease and she began to mend before the third period had expired, though she had not entirely recovered till after the last fortnight of trial had commenced, or perhaps till its expiration. Her sickness was severe during the first part of its continuance. Probably her health was quite as good during the last fortnight, if indeed it was not better, than at any other period of the trial.

In conducting this experiment, my general management in the stable has not been varied in the least particular, save so far as the preparation of fodder by cutting was concerned. I have no doubt a greater gain may be obtained by forcing; but my aim has been so to conduct this experiment that others might be satisfied what results would attend similar management with their own stock.

The table shows the amount of food, (hay and roots,) fed to each animal. Each of these cows has fared just like all the rest of my stock, save that their hay on alternate fortnights has been cut, and the amount of roots fed to them daily has been determined by scales instead of measure.

Perhaps I should add that the milking is at regular hours, at 6 A. M. and 6 P. M.; that each morning each animal is *curried* clean, turned out to drink, and allowed to return to the barn as soon as she pleases; that the barn is shut up till noon, then the same course of watering is pursued, the barn shut up again,—and so at night. At this time the cattle are kept out till they can be bedded down, when they are turned in, fed, milked, and the barn shut up for the night. The amount of food consumed is put before the cattle at *three* meals.

Inasmuch as I have taken the sole care of my stock, I can say with confidence that the weights of fodder and milk are correct. The certificates of the weights accompanying this are vouchers for the gain or loss in live weight of the animals at the respective times of weighing.

The committee will excuse an intrusion of my opinion upon the advantage of cutting hay before feeding to stock, and in what I say I have no reference to the experiment I have detailed. My milking stock consisted of one cow which came in the 29th of last October, the two trial cows, and one other which calved last April, and is expected to calve again the first of next April. Sometime before commencing this experiment, I was feeding to my stock what would be called poor stock hay, with an allowance of roots. I commenced cutting this hay for all my stock, young and old, (sixteen head,) occupying me 1 1-2 hours daily. Almost simultaneously with feeding the cut hay was an increase of milk, very perceptible as it was milked in the pail. An inquiry was made by my wife, who in person takes sole charge of the dairy, as to the cause of this increase. An evasive reply was made. From day to day the milk increased enough, from the stock I have described, to require the substitution of 6 qt. for 4 qt. pans, which had been previously used. I think I am within bounds in saying the increase was over a pint daily per cow, occasioned, to the best of my knowledge, solely by the use of cut hay. As to the general condition of my stock, the committee, should they desire to look at it, can judge.

Whether, in your judgment, this may be the most or the least successful of the experiments in determining this vexed question, is of little consequence. That it may be of such character as to induce to other more general and longer extended trials, is the hope of,

Yours respectfully, WM. S. LINCOLN.

March 12, 1852.

I should have added that the hay used was English, what is called "old field;" that it was universally fed *dry;* that the times of feeding were regular throughout the entire period, being 6 A. M., 1 and 6 P. M.; and that the animals were weighed at each time early in the morning, say from 7 to half-past 8, and always before being allowed to drink. W. S. L.

LETTER FROM HON. JOHN W. LINCOLN.

To the Committee to award the Premiums for experiments in feeding with cut and uncut hay:

GENTLEMEN: — You will doubtless recollect that at the meeting of the Trustees of the Worcester Agricultural Society at which it was agreed to offer premiums for the purpose of ascertaining by experiments the advantages or disadvantages of feeding farm stock with cut or uncut hay, I stated that personally I should not be a competitor; that I had an opinion which I had been unable to find evidence to confirm or disprove, and which I was desirous, as I deemed the subject of much importance to the farmer, to have tested by experiment; that I considered it desirable to excite as much competition for the premiums as was practicable; that to ensure an additional trial I was disposed to say to Mr. Hawes, who has for about 12 years had the immediate supervision of my farm, that he might make the experiment with any of my cattle, and should be entitled to the premium, if the committee should think that the result of the experiment made by him would justify such an award, provided the board should be of the opinion that there was no impropriety in my so doing: Mr. Hawes to be considered as standing in the same condition as those competitors who should make the experiment with their own cattle and food.— The Trustees expressed their approbation of this arrangement as being favorable to the Society, thereby increasing the competition. I accordingly made the proposition to Mr. Hawes, who assented to it with the express understanding that I should have no pecuniary interest in the question of premium, and should have nothing to do with the experiment, except to aid in drawing the report from such facts as he should furnish me, if he should desire it. Of my position the board were reminded at their meeting when I was placed on this committee.

Mr. Hawes made out a written statement of the weighing of the cattle at the different times, and of the hay, cut and uncut, which they had eaten during the different periods, addressed to me, stating to me verbally several circumstances which were not embodied in his report; believing that it was important that all the facts in the case should be made known to the committee, it became necessary that it should be rewritten, which has been done, and it is now communicated to you.

As my connection with Mr. Hawes, as it has been of many years' continuance, is generally known to the public, my position in relation to this experiment would not be understood, without an explanation which should define my position in reference to this business, except to those who, like yourselves, have been acquainted with all the facts in the case, which seemed to render this statement necessary, and it is now submitted to your disposal.

Respectfully, your most obed't servant,

JOHN W. LINCOLN.

STATEMENT OF MR. HAWES.

HON. JOHN W. LINCOLN: — Sir,—As requested by you, I have made a trial of feeding with cut and uncut hay, with your speckled yoke of oxen, in terms of one fortnight each. When one was fed with cut hay, the other had uncut hay, and so changing at the expiration of each two weeks, except at the close when the trial was prolonged. The trial was commenced on Monday, the 15th day of December last, at which time the near ox weighed 1520 lbs., the off ox 1500 lbs., on the hay scales of Henry S. Washburn, Esq., in the Quinsigamond village. Each ox was fed with the same quantity of hay, of the same quality, 35 lbs. of uncut hay being eaten each day to the 29th December by the near ox, and 35 lbs. of cut hay by the off ox. On the 29th December the cattle were again weighed on the same scales, and the near ox was said to weigh 1504 lbs. and the off ox 1487 lbs.; by this it would appear that the near ox had lost in weight 16 lbs. on uncut hay and the off ox 13 lbs. on cut hay. Between the 15th and 29th of December, these cattle were worked 10 days in drawing heavy loads of green oak wood from the farm into the village, some of them exceeding 11 ft. in measure, principally to the houses of Hon. L. Lincoln and W. S. Lincoln, Esq., they being one yoke of a team of two pairs of cattle. It should be stated that I then believed that there must have been an error in the last weighing as above stated; I was of the opinion that the cattle had both gained in weight during the fortnight, instead of having lost any of their flesh; such was also the opinion of others, who saw them, and that opinion seems to be confirmed by subsequent results. The weight as given by the hay scales on the 29th December, was for the near ox 1504 lbs. for the off ox 1487, they each of them had 38 lbs. of hay per day, the near ox having cut hay, the off ox uncut hay. On the 12th of January last they were weighed on the hay scales of William B. Fox, Esq., the scales of H. S. Washburn, Esq., having been rendered useless by an accumulation of ice; the scales of W. B. Fox, Esq., were used during the remainder of the trial. The weight this day, as given by the scales, was for the near ox 1594 lbs., for the off ox 1556 lbs.; each ox during the preceding two weeks had eaten 38 lbs. of hay per day, and if there was no mistake in the last weighing on Mr. Washburn's scales, the near ox had gained 90 lbs. on cut hay, the off ox 69 lbs. on uncut hay—during this period the oxen had worked 10 days in drawing logs to mill, and wood into the central village.

From the 12th to the 26th January, the cattle were fed with 38 lbs. of hay each, except on the 16th, 17th and 18th days, on which they eat 40 lbs. each; on those days they performed no labor and were in the barn the greater part of the day. The weight of the near ox was 1616 lbs., of the off ox 1586 lbs., from which it appears that the near ox had gained 22 lbs. on uncut hay, and the off ox 30 lbs. on cut hay—during this time the cattle worked 10 days in drawing wood to railroad.

From the 26th of January to February 9, each of the oxen eat 39 lbs. hay per day, and at the last mentioned time the near ox weighed 1646 lbs., and the off ox 1604 lbs., from which it appears the near ox gained 30 lbs. on cut hay, and the off ox 18 lbs. on uncut hay—during this time the cattle worked 10 days in drawing logs to mill.

From the 9th to the 16th of February, the cattle were worked 6 days in drawing wood and rocks, and each eat 39 lbs. hay per day; on the last mentioned day the scales gave to each ox the same weight as on the same day a week before, the near ox having uncut hay, the off ox cut hay.

From February 16th to 23d, one week, the cattle each of them eat 39 lbs. hay each day, and were worked 6 days in drawing wood, rocks, &c.,

and on the 23d February the near ox weighed 1648 lbs. and the off ox 1602 lbs., by which it appears the near ox gained 2 lbs. on cut feed and the off ox lost 2 lbs. on uncut hay. From Feb. 23d to March 1st, one week, the cattle were worked 6 days in drawing rocks, wood and logs; at the expiration of the term the near ox weighed 1628 lbs. and the off ox 1617; the near ox having lost 20 lbs. on uncut hay, the off ox gaining 15 on cut hay. As time would not allow the continuance of the experiment, and allow time to make out a report, it was here closed. It will be seen that during the whole time the near ox has gained 103 lbs., the off ox 117 lbs., making 225 lbs.; the near ox has gained on cut feed 122 lbs., the off ox has gained on cut feed 45 lbs., and lost 13 lbs.; net gain 32 lbs., making 154 lbs. gain on cut feed—the near ox has gained on uncut hay 22 lbs. and lost 36 lbs., net loss 14 lbs.; the off ox has gained on uncut hay 87 lbs., and lost 2 lbs., net gain 85; gain on uncut hay, for the pair 71 lbs.; greater gain on cut hay than uncut, 83 lbs., provided there was no mistake in the second weight of the cattle. If no account is taken of the first four weeks the net gain in favor of cutting hay is 59 lbs.

A great advantage in cutting hay, at least for working stock, was very obvious during the whole of this experiment; before the ox feeding on uncut hay had gotten one-half through with his allowance, the ox which had cut feed, had eaten up what was given him and was lying down taking his rest, and this at noon, when but little time is allowed for eating and rest, must be an advantage of no small importance.

The labor of the cattle for the last six weeks, and particularly of the last week, was quite severe, the loads were usually heavy, and in consequence of considerable bare ground, the draught was in many cases very hard.

The state of the atmosphere it was not possible to take account of, as the cattle were employed at labor in the open air without anything to protect them from its severity, (probably suffering more when standing for the loads to be put on than when in exercise,) and would not immediately recover from the effects of their exposure, upon being returned to the barn. The barn where they were kept is warm; at no time during the winter has the manure where the cattle stood been in any manner stiffened by the action of the frost. The temperature in the barn must have been nearer 40 than 30 degrees; but little regard was paid to the warmth of the barn, the cattle being absent so large a portion of the time. It may be proper here to state that it has been deemed expedient to keep open through all the hours of the day, the upper half of a small door for the benefit of air and ventilation, in addition to some small windows. The average number of hours that the cattle have worked per day has been six, but during the latter part of the term their hours were occasionally extended to nine. During the whole trial the oxen had nothing given them to eat except hay as stated, and their only food from the 15th December to March 1st, both inclusive, was hay and water.

Had I exercised my own discretion in this matter, I should have selected two animals for the trial who would have had nothing to do but to eat and grow fat, as more likely to furnish a result which would have appeared far better on paper, and then should have been able to have complied with all the requirements of the society. You will recollect that you suggested to me, to make the trial with the working oxen, saying that you wished the trials should be made under all the circumstances common to a farmer's stock; that it was perhaps more important as applied to working stock than any other; that you doubted whether any other person would make a trial with oxen actually at work at the time, and expressed a wish that I would do it. I yielded to your wishes, and at your request have made the trial; the particulars of which have been stated, to be disposed of in such a manner as the committee shall judge proper.

These cattle were bred in Vermont, were purchased for you when they were about 3 1-2 years old, and about these days are supposed to be coming six years old.

It should have previously been stated that the hay as given to the cattle was all of it in a dry state.

AMHERST H. HAWES.

LETTER FROM HON. JOHN BROOKS.

To the Committee of the Worcester County Agricultural Society on Feeding:

GENTLEMEN:—Herewith you have an account of some trials in feeding which I have made within the last three months, with a view to determine the relative value of different kinds of food for producing milk, and the proportion of solid manure to the hay consumed. I have purposely delayed this communication beyond the time named in the society's rules for having all applications for premium on feeding filed with the Secretary (the 15th of March,) because I do not propose for a premium, but wish only to add whatever I may to the interest of this important subject. You then, gentlemen, will not consider me as competing with gentlemen proposing for premium, but will dispose of this communication in any way you may deem proper.

December 17, 1851, commenced feeding two cows about 7 months after calving; the cows were gravid and expected to calve about the last of March next; live weight 1600 lbs.; one of them 44 the other 31 months old. Each trial continued 5 days. First 5 days fed on 2 per cent. of live weight,

of cut hay daily,	32 lbs.
2 lbs. Indian meal, hay value,	8
Hay value of daily food,	40
Hay value of five days' food,	200

Cost of 5 days' food, hay at 1-2 c. per lb., $1,00.

Milk in five days, 61.875 lbs.

Cost of milk, hay at 1-2 cent a lb., 1.616 cents the lb., or 3.232 cents the wine quart.

SECOND TRIAL.

Fed five days on 2 1-2 per cent. of live weight of cut hay daily, 40 lbs.

Cut hay in five days, 200

Cost of 5 days' food, hay at 1-2 c. per lb., $1,00.

Milk in five days, 60 lbs.

Cost of milk, hay at 1-2 cent per lb., 1.666 cents the lb., or 3.332 cents the wine quart.

These trials show that 2 lbs. of Indian meal are very nearly equal to 1-2 per cent. of live weight of hay, or that one pound of meal is equal, nearly, to 4 lbs. of good English hay.

THIRD TRIAL.

Fed five days on cut hay, . . . 16 lbs.
32 lbs. oat straw, hay value, . . 16
2 lbs. Indian meal, hay value, . 8
Hay value of food daily, . . . 40
Hay value of five days' food, . . 200
Cost of 5 days' food, hay at 1-2 c. per lb., $1,00.
Deduct 5 lbs. hay and straw not consumed 2,5.
Milk in five days' 50 lbs., . . $0,97,6.

Cost of milk, hay at 1-2 cent a pound 1.95 cents the lb., or 3.90 cents the wine quart. The hay and straw cut, and given wet; the meal sifted over the hay and straw. This trial seems to show that 2 lbs. of oat straw is not equal for milk to 1 lb. of hay.

FOURTH TRIAL.

Fed five days, on cut hay daily, . 16 lbs.
Oat straw cut, 32 lbs. hay value, . 16
2 lbs. Indian meal, hay value, . 8
Hay value of five days' food, . . 200
Deduct six pounds not consumed, . 6
194

Cost of 5 days' food, hay at 1-2 c. per lb., $0.97.
Milk in five days, 48 6-16 lbs.

Cost of milk, hay at 1-2 cent per lb. 1.995 cents per lb., or 3.99 cents the wine quart. The hay, straw and meal were given dry, and the trial shows that dry hay, straw and meal is not so good for milk as when wet.

Feb. 3d, 1852, commenced feeding two cows; one 33 months old, 14 days after calving, live weight 1000 lbs. The other 31 months old, 14 days after calving, not now in calf, live weight 690 lbs. These cows were fed five days on 42 lbs., or 2 1-2 per cent. of their live weight of uncut hay and 50 lbs. of flat turnips daily.

Uncut hay daily, ... 42 lbs.
Turnips, 50 lbs., hay value, . . 10
52

Hay value of five days' food 260
Cost of five days' food, hay at 1-2c. per l b. $1,30.
Milk in five days, 153.625 lbs.

Cost of milk, hay at 1-2 cent. the lb., .846 of a cent the lb., or 1.692 cents wine quart.

SECOND TRIAL.

Fed 5 days on cut hay.
Cut hay daily, ... 42 lbs.
Turnips, 50 lbs., hay value, . . 10
52

Hay value of five days' food, . . 260
Deduct five lbs. not consumed, . . 5
255

Cost of 5 days' food, hay at 1-2c per lb., $1,27,5.
Milk in five days, 152.25 lbs.

Cost of milk, 837 of a cent per lb., or 1.674 cents the wine qt.

The cows did not eat the cut hay quite so well as the long hay on the first trial, so that on the whole the experiment shows a small difference in favor of cut hay.

THIRD TRIAL.

Fed same as second trial, except gave 3 lbs. Indian meal instead of 50 lbs. turnips.

Cut hay daily, ... 42 lbs.
3 lbs. Indian meal daily, hay value, 12
54

Hay value five days' food, . . . 270
Deduct 10 lbs. hay not consumed, . 10
260

Cost of 5 days' food, hay at 1-2 c. the lb., $1,30.
Milk in five days 153 lbs.

Cost of milk, hay at 1-2 cent per lb., 0.849 of a cent per lb., or 1.698 cents the wine quart. This trial seems to prove that 3 lbs. Indian meal is equal to 12 lbs. English hay or 50 lbs. of flat turnips for milk.

FOURTH TRIAL.

Fed cut hay daily, . . . 42 lbs.
33 lbs. carrots daily, hay value, . 11
53

Hay value five days' food, . . 265
Deduct five lbs. hay not consumed, . 5
260

Cost of 5 days' food, hay at 1-2 cent per lb., $1,30.
Milk in five days 150.5 lbs.

Cost of milk, hay at 1-2 cent per lb., .863 of a cent per lb., or 1.726 cent the wine quart. This trial shows that 33 lbs. of carrots are not quite equal for milk to 50 lbs. of flat turnips or 3 lbs. of Indian meal. The cows in all the trials had free access to water.

December 10, 1851, commenced feeding one cow 72 months old, one do. 96 months old, one do. 48 months old, 5 heifers 32 months old, 7 heifers 22 months old, 4 calves 9 months old, 4 calves 8 months old. These cattle weighed, live weight, 14,567 lbs., and were fed five days on 277 lbs. of cut hay daily, and drank daily 887 lbs. of water, dropped daily 668 lbs. solid manure, or 2.41 lbs. of manure for one lb. of hay consumed.

Second trial commenced Dec. 16, 1851. Fed same cattle five days on 352 lbs. hay daily, solid manure dropped daily 860 lbs., or 2.44 lbs. for one lb. of hay consumed; drank daily 868 lbs. water.

February 28, commenced feeding one cow 72 months old, one do. 96 months old and one 48 months old, 3 heifers 32 months old, and 6 heifers 22 months old. The live weight of these cattle was 9472 lbs.; these cattle were fed 5 days 240 lbs. cut hay daily; solid manure dropped daily 594 lbs., or 2.47 lbs. of manure for one lb. of hay consumed. Drank daily 542 lbs water.

Hay consumed in the three trials, 869 lbs.
Manure dropped in three trials. . 2122 lbs.

The proportion of manure to hay is as 2.44 lbs. of manure to one lb. of hay; the manure weighed 50 lbs. the cubic foot.

Manure after remaining under my barn one year weighed 44 lbs. the cubic foot, a loss of 6 lbs. in one year, or 12 per cent of its weight when recently dropped. JOHN BROOKS.

Princeton, March 22, 1852.

GRASS—*The Prospect.*—It is no longer a matter of doubt that we shall have a short crop of hay in this vicinity. The season is so far advanced that the best of weather will be insufficient to produce an average yield. Grass was winter-killed to some extent; and added to this we had a cold, dry and backward spring. Grass is light and thin almost everywhere. It is not too late to raise a good crop of corn-fodder, and no fodder is better for cows or cattle generally. An acre or two well cured would do a good deal towards carrying a

stock through the winter.—*Caledonian, St. Johnsbury, Vt.*

INFLUENCE OF THE ATMOSPHERE ON VEGETATION.

It is not sufficient that a plant is set in a soil most appropriate and suitable to its habits, nor that it receives the manures which have a tendency to fertilize and invigorate it;—but it will soon languish and decay if the atmosphere surrounding it have not the proper moisture and temperature; if it be not placed so as to receive the benefit of light, and if the needful stimulating and alimentary elements be not present in a gaseous form, and constantly supplied to the growing plant. The humidity and temperature of the air should bear a constant proportion, otherwise the plant receives injury. If, for instance, the moisture is greatly reduced, and the heat increased, a drought is produced, injurious and sometimes fatal to the plant. And on the other hand it may suffer equal injury if the moisture is superabundant and the temperature much diminished. A continuance of cold and wet checks and enfeebles the plant. If the atmosphere is surcharged with both heat and moisture, the condition most favorable to vegetation is presented.

All seeds germinate well without light. But though light is not necessary to germination, yet generally it is highly beneficial to vegetation, which is a different process from germination, and which requires different gases for its successful growth. Celery is bleached and made tender in being deprived of light; and it is, at the same time, diseased. Light gives the green color to vegetation. The mode, however, in which light operates on plants is not very well known. It is supposed also to have an effect on the odor of flowers and the taste of fruits. Some plants delight in the most vivid rays of summer noon, others flourish best in a moderate light and under the covert of the forest.

But the atmosphere itself, not regarding its conditions of moisture or temperature, nor the light which is transmitted through it, but the elements of which it is composed, is necessary to the vitality of plants, and is by its absorption the chief source of the vegetable vigor and health. When the air is too dry, evaporation goes on faster than moisture can be re-supplied by absorption. At the time of rains and storms, when the atmosphere is both warm and moist, and especially when well charged with electricity, vegetation is most rapid and at the same time most vigorous.

Nest of the Tailor-Bird.—The tailor-bird of Hindostan gathers cotton from the shrubs, spins it to a thread by means of its feet and long bill, and then employing its bill as an awl, it sews the large leaves of an Indian tree together so as to protect and conceal its young. Cotton, as an article of manufacture, is quite of modern introduction to Europe; yet long before the capabilities of this invaluable plant had been discovered by us, the instinct of that little bird had guided it to its use, and the cotton thread was annually employed in the completion of its nest.—*Kidd's Own Journal.*

THE SEASON IN NEW HAMPSHIRE.

The season up to the time of this present writing has been a remarkable one. The warm and growing days have been few. The opening of spring was unusually retarded and it was very late before the seed could be got into the earth. Much of it had not vegetated before the ground became parched for want of rain. This drought was accompanied by cold and severe winds from the west and northwest. Many of the smaller garden seeds have not yet germinated. We have strong hope, however, from the recent showers and rains. The grass in many sections had shown signs of suffering and gave prospect of a light crop. A few days has produced considerable change and the prospect has improved. Each shower has cleared away cold, and with it high winds. As we write, the leaves on the trees that overhang and shade our window look as though a frost had bitten them. Frost was observed in gardens in this vicinity on the morning of the fifth, and once in the week since. Grains are looking well; corn is mostly up, looking pretty well except a little yellow. Potatoes, peas, beans, &c., look uncommonly well. Fruit, so far as we have seen, looks uncommonly well. Warm weather for the remainder of the month, and a warm July, will bring about, we think, a good, general crop—*Granite Farmer, June 22d.*

ROTATION OF OUR FOREST TREES.

We desire here to allude to a subject which has an important indirect bearing, at least on the subject of agriculture, because it illustrates the great rotation principle, in the vegetable kingdom.

The forests in many parts of our country are about changing their tenants. In our vicinity, the great burden of our forest timber, as found here by the first settlers, was white oak. This is about giving place to the black oak, especially on elevated ridges, or where the land is inclined to be sandy. The venerable white oaks, with diameters from 30 to 50 inches, are, in most instances, surrounded by a crop of sapling black oaks, leaving beneath their shade nothing to perpetuate their kind.

If we are not mistaken in our judgment, the cause of this is not very hard to define. It is a matter well understood, by those who have given any attention to the subject, that there is, in every portion of the earth, certain elements or principles, which go into the composition of vegetable matter. That any particular species of vegetable will sooner or later consume out of the earth that which is peculiar to its nature, after which that particular kind will not prosper until the principle which nourishes it is reproduced, either by resting the land, or by special manuring.

Some vegetables exhaust from the soil their peculiar food more rapidly than others. Flax, for instance. It used to be said by old farmers, that a piece of ground that had borne a crop of flax would not bear another for seven years.

It is on this principle that the rotation in crops is predicated; a doctrine, for the knowledge of

which we are indebted to our experimental farmers, and to book reading. This principle, of the rotation in crops, is probably as well understood, at this time, as anything connected with the science of agriculture. And this is the principle, no doubt, which explains why it is that the white-oak is leaving our forests and giving place to the black oak timber. It has been so long the undisputed tenant of our woods, that, having exhausted from the soil that aliment upon which it lives, it retires, in the order of Providence, to give place to a successor whose special food yet remains in rich abundance in the earth.

Every farmer who has attentively observed the progress of vegetation in his own lane and yard, must have noticed the operation of this principle. The order of our grounds is something like this—the first occupant was the smart weed—the next a species of white blossomed weed—then the dog fennel, and now the yarrow is coming. As soon as the aliment was extracted that nourished each particular kind, it died for the want of something to live on, and was succeeded by another species, and perhaps mere accident determined the successor.

Since our attention has been directed to this transition in the forest, we have made the subject a matter of inquiry, when favored with the company of men who would be likely to notice things of this kind.

Having been referred, with reference to this matter, to Joshua Coperthwaite, of Medford, New Jersey, where they have timber lands which have frequently been cut off for the supply of wood to the Philadelphia market, we wrote to that gentleman upon the subject, and have received his answer, from which we take the following extract:—"If the pine is cut off the oak will grow, and if the oak is cut off the pine will grow."

At the late State Fair, at Cincinnati, we met with an intelligent fruit grower from Illinois, to whom we mentioned this forest subject, and found that he had noticed this change going on among the trees of the wood. At our request he penciled down and handed us the following statement. He was formerly a resident of Ohio, and his remarks refer to this State:—

"I have long been convinced that two generations of the same kind of forest trees seldom or never succeed each other on the same tract of land. A crop of trees, nearly all of one kind, which last from two to four and sometimes to five centuries, seem to exhaust the soil of that peculiar nutriment which is adapted to that sort, and at the same time prepares it for some other.

"Instances: there is the track of an old tornado, which passed through Delaware county, the north-east corner of Licking, and finally into the south-east part of Knox, which, upon counting the annuals on a number of stumps, I ascertained to have occurred about the year 1740. In the track of this tornado, the timber is essentially different from the older timber on each side of it. Again; most of the west part of Knox county was, thirty years ago, when I first became acquainted with it, covered with a growth of beech, slightly mixed with other timber. That this growth had succeeded an oak forest was quite plain, from the fact, that oak trees of enormous size, in a state of decay, were to be found in every direction."

The foregoing extract is taken from the Agricultural Report of the State of Ohio, a large volume, for which we are indebted to our respected correspondent, C. Springer, of O., who directed our attention to this subject, which is contained in a letter to E. Harkness, of Muskingum Co.

We have noticed, and we have heard many farmers remark, that white oak and maple came up after pines were cut down. We have seen this in the pine forests in the counties of Albany and Oneida in this State, but we have never examined the subject so attentively as to perceive the existence of a certain law in these changes. The subject, we believe, demands further investigation, for it is one of great interest to every class of our citizens.—*Scientific American.*

For the New England Farmer.

THE GARDEN.

BY E. PORTER DYER.

A garden, a garden, O give me a garden,
With soil of a mellow dark mould,
Where my face may get tanned, and my fingers may harden;
I would not exchange it for gold.

This spading, and hoeing, and raking, and wheeling,
Preparing to scatter the seed in,
To my mind the goodness of Him is revealing
Who planted a garden in Eden.

The scent of fresh mould—'tis refreshing to smell of—
The toil it requires is reviving;
The sweat of the brow, though 'tis nothing to tell of,
It sweetens the gardener's living.

Our first father found it an exquisite pleasure,
To practise the science of pruning,
Or walk with his Eve in the shade at his leisure,
For instance while "taking his nooning."

And whether he planted corn, beans, or tomatoes,
I find not a word or tradition,
But always supposed when he dug his potatoes,
He found them in healthy condition.

His strawberry plants must have looked quite delicious,
At least, while in process of bearing—
As berries and cream were regarded nutritious,
Of cream, his dear Eve was not sparing.

She always took pleasure in setting her table
To study the taste of her Adam;
And he from his garden whene'er he was able
Found comfort in picking for madam.

And often I've thought had not garden employment
Been furnished in Eden for Adam,
His wife had been homesick, and all his enjoyment
Been making herb-tea for his madam.

STRAW AS A COVERING.

Clean straw is an excellent covering for many things; thousands on thousands of sea kale in frames or under hoops have no other blanching material; and how clean they grow in it! Rhubarb, in winter forcing and early spring, grows beautifully pinky. It is well known that early spring frosts destroy rhubarb; but if a six inch layer of straw is put on every crown, as the heads put up, they raise the straw with them, and it not only gives the stalks a better color, and makes them less "stringy," but it keeps the leaves from growing too large. No wind will blow it off, nor will the most intense frost injure the plants. Straw should not be looked on as a mere litter: it is as good as a frame upon a large scale. What sort of eatable strawberries would we have without

straw? In summer, every crop, such as gooseberries, currants, and many other things, should have the protection of straw, which keeps the sun from drying up the surface, and the surface roots damp and cool, while all weeds are kept down. Market gardeners use it for their frames—it matters not whether for cucumbers, melons, or potatoes, straw is their covering—and their crops are more secure than when protected by a thin mat. But some may object to the use of straw, on account of the litter it makes in a garden; but if any of those who object to its use for this reason, will just take a peep into Covent Garden market at any season, they cannot fail to be struck with the quality of the produce, in the raising of which straw plays an important part. Straw is also the best of all manures for a strong retentive soil, when it is dug in fresh, as it decays and leaves innumerable worm-like holes, which act as drains for the roots.—*Gardener's Chronicle.*

EFFECTS OF THE LATE SEVERE WINTER UPON VEGETATION.

Reports from various parts of the country establish the fact that the severe cold of the late winter has proved destructive to many fruit trees and plants. When we say *the severe cold*, we do not mean to declare that it was the *intensity* of the cold in itself that has proved so fatal, for that we do not pretend to know. The question still remains an open one, and demands the careful investigation of those best able to settle it.

Is it the *intensity* of cold that has killed the trees and plants?

It is said that the tree becomes frozen so hard that the sap vessels are burst, and that causes its death. There are not many winters in New England so mild but that the trees are all frozen so solid that logs from them may be split almost by a single blow of an axe from an athletic arm. But this does not seem to have been a sufficient condensation of cold to injure trees, or we should have lost them all. If they could not withstand this degree of freezing, they would soon become extinct. They not only withstand the lowest temperature that occurs in this latitude, say from sixteen to twenty degrees below zero, as the lowest point, but in the neighborhood of the arctic regions they live and grow to an enormous size.

Sir John Franklin (whose sad fate is universally lamented) in his overland expedition to those regions, between the years 1823 and 1827, wintered where the strongest brandy froze solid in a few minutes upon exposure, and the ink with which he was writing frequently froze upon his pen, although using it immediately before a huge fire of logs:—and yet in a climate giving this intense, long-protracted and appalling cold, he gives an account of trees growing there whose circumference is larger than any we have ever heard of elsewhere. These trees, according to his statement, attain a height of from 150 to upwards of 250 feet, varying from *twenty* to nearly *sixty* feet in circumference; thus far exceeding

> "The tallest pine
> Hewn on Norwegian hills to be the mast
> Of some great amorial."

So it would seem that trees are not only able to bear this extreme condensation of cold, but to bear it through a long-protracted season of intense and unmitigated severity—coming out and growing freely through a great many years, and reaching a magnitude unparalleled in warmer climates.

That these trees were indigenous and suited to the climate, would not seem to argue anything in favor of such hardihood and immense growth, any more than that our trees and plants, being indigenous, should possess the same power to resist the effects of cold. Beside, in nearly all our winters, the degree of cold for a short period is as great as it was at any time during the last one. Winter before the last the mercury fell as low in this region (being about eighteen degrees below zero,) as it did last winter, but without any injurious effect upon the trees and plants.

We are, therefore, led to believe that it is not the *intensity* of the cold that has caused the destruction daily witnessed among the trees and plants.

To what, then, may be imputed such wide-spread injury to the trees?

Can it be excessive evaporation in early spring? Many trees are now dead whose branches were full of sap and plump on the first of April, showing no indications whatever of the speedy death which awaited them, with the exception that blossom buds were found to have lost their vitality. Griffiths, in his Chemistry of the Seasons, says that plants are frequently "blighted" during early spring by dry winds, for when branches and leaves are first put forth, they are extremely succulent, and part with water so readily that during a dry easterly wind this loss by evaporation cannot be rapidly compensated for, by the capillary attraction of the roots. If such were the cause of the injury it should prove so annually, for fierce winds prevail throughout New England, for more than half the time during the entire spring months. If not to excessive evaporation, may the injury be attributed to the great and sudden changes which occur both in the autumn and spring?

Of late years the autumn weather has been mild and moist, and favorable to the growth of plants until a late period. The wood made during this time did not get perfected, and the result has been that this growth is found dead in the spring on the quince, peach, apple and plum trees.

Does this late growth affect the general condition and health of other portions of the tree, or is there any probability that it has in any way been accessory to its death?

Changes of temperature in the spring, are some-

times very great within a period of a few hours. Plants come forward in moist warm weather so that they show expanded leaves, buds are swollen and ready to burst, and the branches full of the ascending sap, when the sudden fall of temperature takes place. Leaves that had come out turn black and die, and the tender and half-hardy shrubs perish with them. These are phenomena of annual occurrence and familiar to most observers. But these changes, occurring after vegetation had fairly started in the spring, have not been supposed to prove destructive to trees of three or four, or even ten years' growth. That process seems to be one enveloped in mystery, and demands the attention of close observers and students of nature, to solve its workings.

There are those among us who have given a life of attention to these subjects, and now that they are prominently before the persons interested in them, it is hoped they will make their theories and observations known.

We have barely touched upon these topics, more with a view of eliciting facts from those of vastly greater experience, than to express any decided opinions of our own. We hope our correspondents who have carefully observed these phenomena, will favor us with the conclusions at which they have arrived.

For the New England Farmer.

AGRICULTURAL SCHOOLS.

Mr. Editor:—With your permission, I would like the privilege through the *Farmer* to express my thanks to your Winchester correspondent, "Echo." Not so much for his favorable notice of my article which appeared in the *Farmer* not long since, as for the sound and sensible views which were expressed in his own upon the same subject. And also to express my satisfaction for his appropriate and practical remarks, as to the propriety of making it a rule with agricultural papers, so far as their columns will admit, of publishing other articles than those which may agree with the opinions of their editors. Such a policy I think would produce a very beneficial effect. An exchange of opinion is just what is wanted, in order to obtain a clear view of facts, and the true merits of the case. I believe in the saying of that great man, Thomas Jefferson, "that there is little to fear from error, so long as truth is left to combat it." I therefore most heartily endorse the sentiment of our friend "Echo," upon this part of his subject, and hope the *present* editor of the *Farmer* will continue his present *liberal* policy towards those of his correspondents who may happen to differ from him, and not *do* as one of his "illustrious predecessors" *did;*—bring *mourning, lamentation and woe* into one of the *best* of families, by casting one of his *offsprings* upon the *funeral pyre* to be consumed by that fearful element, merely because he was not pleased with its *beauty*, or if suffered to live, its growth might become *dangerous* to the community. I take it, however, that brother "Echo" is not *the* man to give way to *grief*, even when overtaken by such calamities as that described. I was not aware before reading his able article in the *Farmer*, that the experiment of an agricultural college or school had been tested in this country to that extent and under so favorable circumstances, as he informs us it has. I am not disappointed, however, in their results. It is no more in my opinion than others are destined to meet with, that have the folly to try the experiment. I have one now in my mind, whose head stands eminently high for his scientific acquirements. Yet if my friend "Echo" should live, I predict that he will have an opportunity at some early future to write its *obituary*, and to exclaim, as he reasonably did before, where is it now? and the answer will be the same, echo will answer where! Respectfully, &c.,

Newton Centre, June 17. W. A.

For the New England Farmer.

FEEDING STOCK.

Mr. Editor:—The experiments in cutting fodder for stock published in the late numbers of your excellent paper are very interesting and the results quite worthy of notice. But the most remarkable article relating to this subject appeared in your 25th number, copied from the *Wool Grower*. Though doubtless never intended to "pull wool" over the eyes of any one, it savors somewhat of the marvellous. In fact, though never prone to quote Latin, on reading it I did exclaim, with all due emphasis *mirabile dictu*. And there does seem occasion for wonder. It is sufficiently wonderful that three cows should be kept 160 days on a daily allowance for each cow of 8 1-3 lbs. of hay and 9 quarts of shorts, but it is more wonderful still that they each continued to give 12 quarts of milk per day for the whole period; and it caps the climax of wonders that they "came out in the spring good beef." My own experience, though perhaps wanting in accurate experiments, would suggest twice the above amount of food, or its equivalent, as the proper quantity required in a similar case; but if we can all pursue this improved method with equally satisfactory results, the good time coming of which we hear so much cannot be far away. The knowledge of it would be worth the price of a farm to thousands. Who will say from his own experience that the plan is perfectly feasible? Inquirer.

Rehoboth, June, 1852.

Remarks.—The article from the *Wool Grower* has had one desirable effect, that of calling attention to this very important subject. The truth is, we cultivate our crops and feed them out more *by guess* than any other way, and in consequence perform a great deal too much labor, and use far more than is necessary of its products to produce certain results. Exact knowledge is as necessary on the farm as in the workshop, in order to reap the largest profit from our labor. This knowledge is slowly dawning upon us; and until its full light come we must work and wait patiently, each one "magnifying his office," to the extent of his ability. We hope to hear from "Inquirer" again.

☞ Somebody says "physicians are the nut-crackers used by angels to get our souls out of the shell which surrounds them."

UNITED STATES CENSUS.....PRINCIPAL AGRICULTURAL PRODUCTIONS OF 1849.

STATES.	Bushels Wheat.	Bushels Ind. Corn.	Pounds Tobacco.	Pounds Wool.	Pounds Butter.	Pounds Cheese.	Tons Hay.	Bushels Flaxseed.	Pounds Map. Sug.
Maine	367,980	1,741,715	.....	1,366,866	8,488,234	2,201,105	794,760	362	87,541
New Hampshire	185,658	1,573,670	50	1,108,476	6,977,056	3,196,563	598,854	94	1,293,429
Vermont	493,666	1,625,776	.....	3,492,087	12,128,095	6,755,006	763,579	307	5,159,541
Massachusetts	29,784	2,326,167	119,306	576,736	7,825,337	7,124,461	645,749	72	768,596
Rhode Island	39	516,133	.....	111,937	1,066,625	296,748	73,353	.....	.....
Connecticut	40,167	1,996,462	1,383,932	5?2,529	6,620,579	4,512,019	499,706	9,775	37,781
New York	13,073,357	17,844,808	70,222	10,021,567	82,043,823	49,785,905	3,714,734	53,824	10,310,764
New Jersey	1,508,216	8,605,396	.....	375,932	9,070,710	500,819	429,129	12 353	5,886
Pennsylvania	15,482,191	19,707,702	857,619	4,784,367	40,554,741	2,39?,279	1,826,265	43,627	2,218,644
Delaware	466,784	2,888,896	.....	52,887	1,034,867	3,187	39,159	838	.....
Maryland	4,494,680	11,104,631	21,199,281	477,438	4,?06,160	3,925	145,070	2,816	47,740
District of Columbia	17,370	65,280	15,000	.....	14,869	.....	1,974	.....	.....
Virginia	14,516,950	35,538,582	56,516,492	2,850,909	11,126,795	434,850	870,177	53,333	1,223,905
North Carolina	2,147,699	28,286,999	12,059,147	915,289	4,144,258	95,043	145,180	38,183	27,448
South Carolina	1,066,278	16,272,308	73,235	487,243	2,979,975	4,810	25,427	11	200
Georgia	1,085,784	30,428,540	420,123	988,802	4,640,074	46,391	23,427	585	50
Florida	1,225	1,993,462	982,584	23,235	325,853	18,324	2 6?0	.....	.....
Alabama	292,429	28,485,966	163,605	637,829	3,961,592	3?,423	31,801	54	473
Mississippi	215,181	21,836,154	48,349	556,057	4,388,112	20,314	12,517	21	110
Louisiana	84	10,915,651	23,922	105,393	685,136	1,148	20,572	.....	250
Texas	42,448	5,796,?45	60,770	122,118	2,319,574	92,018	3,327	16	.....
Arkansas	193,902	8,857,296	224,164	181,427	1,854,104	23,440	3,924	695	9 625
Tennessee	1,638,470	52,137,863	20,144,380	1,340,833	8,130,686	179,577	72,942	19,405	159,647
Kentucky	2,184,763	58,922,788	55,765,259	2,246,168	10,115,267	228,744	11?,296	80,458	388,525
Ohio	14,967,056	59,788,750	10,480,967	10,089,607	34,180,458	21,350,478	1,360,636	185,593	4,521,643
Michigan	4,918,706	5,620,215	2,225	2,047,364	7,043,794	1,012,551	394,717	1,186	2,423,897
Indiana	6,625,474	52,887,564	1,035,146	2,502,763	12,748,186	666,986	402,791	35,603	2,931,638
Illinois	9,433,965	57,179,283	844,129	2,129,139	12,605,554	1,283, 58	586.011	11,873	246,078
Missouri	2,943,840	35,709,042	17,038,364	1,63?,182	7,762,124	201,697	116 294	13,439	171,943
Iowa	1,442,074	8,475,027	2,012	363,398	1,933,128	198,444	84,598	2,182	70 689
Wisconsin	4,292,208	1,983,378	768	243,065	888,816	440,961	295,927	834	661,969
California	98,282	90,082	1,000	4,800	705	150	2,038	.....	.....
Minnesota	3,422	16.665	.....	260	1,100	.....	2,069	.....	2,956
Oregon	228,682	2,928	325	29,596	211,734	36,030	373	.....	.....
Utah	103,441	9,144	.....	8,897	75,064	32,646	4,288	5	.....
New Mexico	196,575	355,795	1,118	32,641	101	5,887	.....	.....	.....
Total	104,799,230	591,?86,053	199,532,494	52,422,797	312,?02,286	103,184,585	13,605,384	567,749	34,?79,863

AGRICULTURAL PROGRESS OF THE UNITED STATES.

The following letter, addressed to the editors of the *National Intelligencer*, Washington, and published in that journal, contains facts interesting to the American people:

To the Editors of the National Intelligencer:—The statistics of Agriculture, so far as they have been published from the Census Office, disclose many instructive facts. To promote the farming interest, and bring some of the most prominent features of this branch of national industry under the eye of legislators and statesmen, I respectfully solicit a small space in your paper to call attention to the progress made by a nation of farmers.

Maize is the most important crop grown in the United States. It is one of the staples of every State and Territory, not excepting Oregon, whose climate is least friendly to this American cereal. The United States census of 1840 makes the corn crop of the year preceding 377,531,875 bushels. The census of 1850 shows that the crop of 1849 was 591,586,053. Increase, 214,054,178 bushels. These figures indicate a gain of fifty-seven per cent.; while the increase of population was not far from thirty-four per cent. Corn being one of the most profitable crops grown anywhere, I have studied its increase and decrease in the several States with much interest; but a due respect for the numerous claims on your columns forbids an extended notice of even the most abundant and remunerating product of our national industry. Allow me, however, to say that New York produced in 1839, 10,975,286 bushels; and in 1849, 17,944,808 bushels. This, for an old State whose rural population increased but little in the last decade, is a large and creditable gain. It is one of the many good fruits of her excellent agricultural societies, known all over this extended Republic, as well as in Europe.

Pennsylvania has advanced her corn culture considerably, although less than New York. Her crop in 1839 was 14,240,022 bushels; in 1849 it was 19,707,702. Gain 5,467,680 bushels. She will do better in the present decade.

Georgia has sustained an agricultural journal for the last nine years, and a flourishing State society and others some five years. Her corn crop in 1839 was 20,905,122 bushels; in 1849 it was 30,428,540. While Georgia has added to her annual harvest of maize 9,523,418 bushels in ten years, South Carolina has increased hers only 1,549,503.

Ohio has *seventy* well organized agricultural societies, and an efficient board of Agriculture. Her corn crop in 1839 was 33,668,144 bushels; in 1849, it was 58,922,783. Gain in the ten years, 25,354,639 bushels.

These official statistics speak volumes in favor of agricultural societies, and legislative aid for their support. They are composed of practical reading farmers, and I am very happy that men of this stamp are making an earnest effort to organize a national agricultural society. Should they, in its feeble infancy, ask for a little assistance from Congress, it is to be hoped that such small aid as State Legislatures grant to State societies will not be withheld. To say nothing of the large increase in her grain crops, New York, by giving some forty-five societies less than $8,000 a year, has increased the products of her dairies over fifty per cent. The recent census shows the immense product of over *eighty-two million pounds of butter*. (82,043,828

lbs.) Cheese 49,785,905 pounds. In the production of these articles, the gain from buttermilk and whey in pork-making amounts to millions of dollars.

Unlike the farmers of New York and Ohio, those of Virginia have failed to discover the advantage of united efforts for the promotion of agriculture. In 1839 the corn crop of Virginia was 34,577,591 bushels—in 1849 it was only 35,538,582. Gain in ten years but 960,991 bushels.

With a view to correct what I cannot but regard as an erroneous judgment in that noble Commonwealth, I state the fact, that from no other State in the Union has opposition been seen or felt to a national agricultural society. Intelligent business men combine their efforts and means to advance commercial, manufacturing, banking, railroad and educational interests; and why should not farmers unite their wisdom and labors to promote improvements in tillage and husbandry? The science of combinations is as applicable to agriculture as to any other business pursuit whatever. Isolated cultivators of the earth may increase their knowledge and improve their farming operations very little in the lifetime of a generation, but their progress will be so far exceeded by such as skilfully combine their individual powers, that the former will appear to retrogade, not advance.

DANIEL LEE.

For the New England Farmer.

THE SEASON—POTATO BALLS—PEACH LEAF.

DEAR SIR:—In testimony of my gratitude for your monthly lectures, instructions and counsels, please accept a few small notes—not *bank* notes, for these come into my pocket few and far between—yet such as I have I send.

1. *The season.*—Rainy, scowling April caused a late May planting, which was succeeded by chill winds and drought. Corn and potatoes have come up slowly and partially, and some farmers have planted their corn the second time. Two or three pleasant rains, but not copious, have helped the growth, but continued dry weather has succeeded. A trying time this for oats and grass seed.

2. *An agricultural lecture.*—This was given confidentially to the auditors, here, in April, at one dollar per ticket. Of its merits I am not able to judge, not having heard it. Shallow planting, said to have been recommended, has proved unpropitious to those who have tried it. A farmers' club seems to have grown out of it, and your namesake, the weekly *N. E. Farmer*, is welcomed as an adviser, in this fraternity. I hope for good results.

3. *Potato-balls.*—I shall plant them no more to get a healthier race, for their tubers rotted the first year of my experiment.

4. *A stone rake*, or *harrow.*—An implement of this sort, constructed to loosen and collect cobble-stones, that constitute a large portion of the soil in some of our gardens and fields, I should like to see in operation. It would be a great labor-saving improvement, and would enable us to plant seed without covering them with stones, and would deepen the soil. Our stones show no signs of decomposition, and can be spared.

5. *Tobacco.*—Will some agricultural chemist solve this problem, founded upon the opinion that tobacco has not yet been applied to its best and most appropriate use. If all the tobacco, chewed, puffed off in smoke, spirted off and snorted off, from all the mouths and noses in one single town of New England, was duly combined with suitable other ingredients, in one grand compost, from how many acres of land would it be sufficient to exterminate cut worms, cornstalk-borers, wire-worms, curculios, *et id omne genus?* That weed is an abomination to almost all insects, I apprehend, and also to all quadrupeds unless to a new race of cows, of which you, sir, inform me this present month. Can they be of near kin to those, of which I once heard found at Provincetown, much addicted to catching and eating fish in the surf!

6. *The peach leaf curl.*—I mark it upon a seedling of one year's growth, but know neither its cause nor cure. There evidently is a derangement in the vegetating process both of branch and leaf, preventing the regular formation and expansion of the woody fibre, and the leaf seems gorged, and unnaturally distended with sap, even to mortification. The leaf assumes also the appearance of mildew. Is my seedling like a rickety child that has the healthy formation of bone prevented by lack of right materials duly combined, so that the healthy organization of wood being arrested, the vegetating process assumes this misshapen form?

Now, *Mr. Farmer*, lest my notes prove quite below par in your market, this experiment with a single half dozen you will deem quite sufficient for the present. Truly Yours,

J. LEE.

Salisbury Center, Conn., June 14th, 1852.

REMARKS.—Thank you, friend Lee, not only for the matter but for the manner. This sententious and concise mode of writing, introducing new facts and dropping a remark here and there upon them, is attractive, and therefore likely to be instructive. Your remarks suggest several things in our own mind which we should be happy to say, but have not the leisure at this moment. We hope to hear from you frequently.

WOOD LAND.

Fifteen acres of wood and timber land will furnish a farmer his ordinary timber and wood for two fires. Ten cords of wood will suffice for any man to keep two fires the year round provided he has tight rooms and good stoves. We have kept two fires since the first of November in two large rooms, and have not yet burnt three cords of wood, and we can assure you that we like a good comfortable fire. The farmer should commence on one side of his lot, and cut the wood clean as he goes. In this manner the young shoots come up alike as they receive the sun alike. Now say there are thirty cords of wood to an acre; if he cuts ten cords of wood a year, it will take him three years to cut off the wood of a single acre—and it will take him forty-five years to cut the wood off from his lot of fifteen acres. At the end of forty-five years, he may go back to the first acre he cut, and cut thirty cords to the acre. On our ordinary upland, wood will grow to thirty cords to the acre in thirty years.

Thirty-four years since, we recollect of assisting in clearing fourteen acres of wood-land, and getting the same into winter rye. After the crop of winter rye was taken, it was pastured for a year

or two, and then suffered to grow up. The growth was white oak, red oak, yellow oak, chestnut and maple. Seven years since, that *same rye field* was cut over, and there was not a single acre of it but produced thirty cords to the acre! And this in twenty-seven years!

HAY—ITS COMPOSITION.

"Hay," remarks a late author, "is composed of four distinct parts, each of which has a very different nutritive value. It is of consequence, then, that in a specimen taken for the determination of the azote it contains, each of these parts should be properly represented. I distinguish in hay—

1. The woody stems.
2. The slender straws or stems, to which the leaves are attached.
3. The leaves, flowers and seeds.

A small portion of hay is taken, and carefully sorted, and the parts are weighed separately. In a specimen of strong meadow hay, made in 1841, I found :—

	LBS.		DRACHMS.
Woody stems	2.404	Taken for analysis	680
Straws of very slender stems	8.493	Taken for analysis	239
Flowers, leaves and a few seeds	1.764	Taken for analysis	497
Mixture analyzed			1,416

ANALYSIS.

Azote, per cent	1.19
Contract hay for Parisian Cavalry, 1840	1.21
Hay from Alsace of 1835	1.04
Do. do. 1837	1.15
Mean of four samples, in the state in which it was consumed	1.15."

The above analysis was conducted by the chemist BOUSSINGAULT, and not only shows that hay differs considerably in the best qualities of the article, but that there is also a difference in the nutritive qualities of the several members of the grass plant.

TUSSAC GRASS.

This grass derives its name from the peculiar habits of growth which characterize it, the radicals and smaller roots becoming inosculated, or closely matted, and forming with the pedicles, or root stalks, a large tuft, denominated "*tussac.*" These masses, formed by the columnar portions of the plant, are generally, in fact, always isolated as to position, and sufficiently separated to admit of a person's passing between them; often forming walks, arbors and arcades of surprising beauty, and furnishing grateful shelter to numberless birds, and not unfrequently to man. Bougainville asserts that he frequently obtained shelter in this manner while wandering in the "tussac lands"—the inclined stems furnishing a roof, and the dry leaves supplying a comfortable bed. These remarks, however, apply to the tussac grass only in its most perfect and luxuriant state. In this country, although very vigorous and productive, it rarely attains a height of more than a few feet. It was supposed by the earlier botanists to be a *fescue*, and we see it referred to in some old works under the name of *Festuca flabellata*, and *Festuca cæspitosa*. It is now, however, regarded as belonging properly to the genus *Dactylis*, and we find it alluded to by Foster under the appellation of *Dactylis cæspitosa*. It has a generic relationship to the *Dactylis glomerata*—"Cock's foot," or "Orchard grass." It is a perennial product, and has been found to be extremely well adapted to orchards and other shady localities, where the ordinary grasses rarely succeed. The following botanical description may be of interest to some of our readers :—

"Spikelet composed of three or four florets, of a pale, yellow green color. The calycine glumes are lanceolate, acuminate, longer than the spike of flowers, slightly kuled, shortly ciliated on the back, three and a half inches long, the margins a little involute, and as well as the apex, membranous and transparent, the superior one a little longer than the other, three-nerved, the nerves ciliated. The lower glume or palea of the corolla, concave, compressed, and sharply kuled; bluntly trifed at the apex, five-nerved. Stamens three. Anthers pale yellow. Ovary nearly ovate and glabrous. Fruit elongate-ovate, or almost cylindrical, slightly trigonous, of a pale yellow color and smooth."

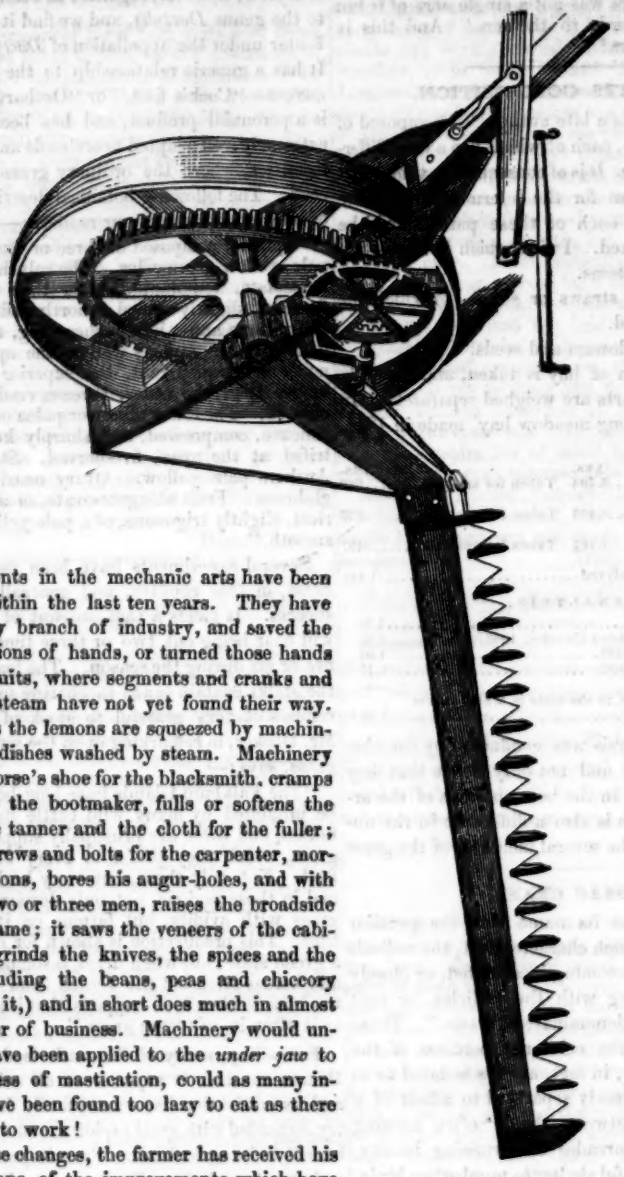
Several experiments have been made with this grass, in this country, and generally with good success. It yields a vast amount of fodder, as it will bear being cut two or three times—some say five or six during the season. The leaves and even the stalks contain much saccharine matter, which renders it very grateful to stock of every kind. Mr. Hooker, in remarking upon the qualities of this grass, says :—

"The Falkland Islands have long been known to be inhabited by many wild cattle and troops of horses, and these are principally supported by this grass, which they prefer to every other kind of food. Not only these, but every herbivorous animal in these regions, not only devours the tussac grass with avidity, but fattens on it in a short time. This predilection is shown for it not only in a green state, but when dried, insomuch that cows and horses often eat the thatch from the roofs of the houses when it so happens that it is composed, as it often is, of tussac grass."

For soiling, many of the cattle-feeders of Great Britain consider it superior to all other grasses, and its cultivation has consequently, in that country, extended with great rapidity, and with eminent benefit to its agriculture. From its peculiar habits and structure it is well adapted to light lands—such as sandy plains where there is a deficiency of *humus*, and where most other grasses, not even excepting the indigenous varieties, refuse to grow.

REPORT OF THE WORCESTER COUNTY SOCIETY ON FEEDING FARM STOCK.—The attention of the reader is again called to the valuable report from the Worcester Society in relation to feeding farm stock. It is the best report of that character that has ever been published in the State.

KETCHUM'S MOWING MACHINE.



Improvements in the mechanic arts have been very great within the last ten years. They have reached every branch of industry, and saved the labor of millions of hands, or turned those hands to other pursuits, where segments and cranks and pulleys and steam have not yet found their way. At the hotels the lemons are squeezed by machinery, and the dishes washed by steam. Machinery shapes the horse's shoe for the blacksmith, cramps the boot for the bootmaker, fulls or softens the hides for the tanner and the cloth for the fuller; makes the screws and bolts for the carpenter, mortices his tenons, bores his augur-holes, and with the aid of two or three men, raises the broadside of a huge frame; it saws the veneers of the cabinet-maker, grinds the knives, the spices and the coffee, (including the beans, peas and chiccory ground with it,) and in short does much in almost every manner of business. Machinery would undoubtedly have been applied to the *under jaw* to aid the process of mastication, could as many individuals have been found too lazy to eat as there are too lazy to work!

Amid these changes, the farmer has received his share, perhaps, of the improvements which have been made; and what is encouraging, while he is benefited so much by labor-saving machinery, his products command in the market a higher price than ever before.

The cut at the head of this article represents a new implement for the farm, and one of great importance. It is said to be simple and efficient; not well suited for a rough surface, but working well on rolling land, or even side hills, if smooth. It will cut an acre of grass an hour, even and handsomely, spreading it as it proceeds, ready for drying.

The usual period of good hay weather is not of long duration, and therefore most farmers feel obliged to work very hard while it continues; and even then considerable grass is cut in an unfit condition, some of it too early and some too late. The horse rake has proved a remedy for this in some degree, and the mowing machine will stil

further lessen the difficulty. The dark points in the engraving stand out before the teeth, to protect them and untangle the matted grass. The teeth are the white points, like saw teeth. They are moved back and forth by the action of the wheels with great rapidity. The machine weighs about five hundred pounds, and is easily drawn by two horses.

For the New England Farmer.

IS ASPARAGUS A MARINE PLANT?

BY CHARLES SIEDHOF.

Asparagus is generally believed to be a marine plant. I have very often inquired of such as asserted this, on what shore it was found growing wild; I could not, however, obtain any definite answer, the general result of my inquiries being this, that it was *thought so*, and that *the books said so*. It is incredible, how much there is believed on mere authority; but human authority, however great, is always injurious to truth, which never will or can be impaired by a thorough, but of course sincere, investigation. Truth will defend itself. There is no difference in the *absolute* value of single truths, because their contrary is error; still there is a great difference as to their practical importance.

Being unable to settle the question in regard to asparagus by literary means, I cannot but resort to what I have seen and experienced myself. Some ten years ago I travelled on foot nearly all along the sea shore from Holland to Denmark for scientific purposes, especially for the preparation of a work on ornithology which was published in 1845. I spent weeks and months on islands in the North Sea, visited the shores of the Baltic and of the Mediterranean. I have been engaged for years in collecting the marine plants of northern Germany for a friend who intended to publish a special flora of them. But *I have never met with a single asparagus plant* near the seashore in northern Germany.

There is a ridge of hills to the South of the Harz mountains, running parallel with them, and called "Die Hainleite." I was born in a little village among those hills, and recollect very well, that not very far from it, but nearer to the town of Frankenhausen, there was such an abundance of asparagus plants in the woods, that children used to cut them there and sell them in the towns adjacent. I have cut them myself many a time, when a boy, and upon inquiry whether asparagus had always grown on those hills, I was informed they had been there from time immemorial. The soil where they grow there, is calcareous.

In making asparagus beds in Germany, we dig them five feet deep, fill them with the richest possible soil, but which must be free from undecayed manure. This soil is previously mixed with some air-slacked lime and brick-dust. A friend of mine in northern Germany, who was desirous of having an asparagus bed, but who could not procure the necessary manure, followed the hint he took from my relating him, that I had seen the asparagus growing in the woods, and filled his bed with brushwood and friable, very sandy soil from his garden. His asparagus were the finest I have seen. I have already prepared a bed here for the same experiment, it being worth trying.

Lancaster, April 16, 1852.

For the New England Farmer.

FELDSPAR.

Editors N. E. Farmer:—I wish to inquire of you, what are the qualities and properties of *feldspar* that promote the growth of vegetable matter, such as is usually raised on farms in Massachusetts. Also, what are the component parts of *feldspar*. In New Braintree, and the towns around there, there are large quantities of decomposed *feldspar*, and many of the farmers think, that it supplies the waste caused by the growth of vegetable matter. Please explain, and answer these inquiries, and oblige your friend, Philo.

North Brookfield, June 8, 1852.

Remarks.—Feldspar is of two kinds, viz., potash feldspar, in which potash is the alkali: this is the common kind: soda feldspar, in which soda is the alkali. There are other varieties mentioned, but their composition is not peculiar. The composition of feldspar is silica, 65.21—alumina, 18.13—potash, 16.66. A crystalized specimen, analyzed by Vauquelin, gave silica, 64—alumina, 20—potash, 14, and lime 2. All these are good; the potash is valuable on all soils, because it enters, more or less, into all plants. See the article on alumina n a late number. The decomposed feldspar will undoubtedly be a valuable dressing on any of our soils.

DISCOVERY OF A NEW GUANO ISLAND IN THE SOUTH PACIFIC.

A new and extensive guano deposit has recently been discovered upon an island in the South Pacific Ocean, and is causing considerable speculation in the commercial circles of London, as we learn from the *Shipping Gazette*. It appears that several months ago, the fact of the existence of guano in this new locality was communicated by an old whaling captain to his owner, who determined that the knowledge should be kept a secret until more fully substantiated, and if found correct, then to place the discovery before the shipping interest. With this view, he gave instructions to the captain of a vessel he was dispatching upon a voyage round the Horn, to search for the island in the latitude and longitude furnished him, and to report to him all the particulars from the first port he could make. So faithfully and successfully have these orders been fulfilled, that the owner has had the original statement fully confirmed, and received samples of the guano taken from the spot by his own captain. These samples have been analyzed by an eminent London chemist, with the following results:

7½	parts	salts of ammonia.
8½	"	animal organic matter.
2½	"	sulphate of muriate of potash and soda.
51	"	phosphate of lime and phosphate of magnesia.
18	"	sand.
11½	"	moisture.
100		

By comparison of this analysis with that of the best Peruvian guano, now selling at £9 5s. per ton, the value of the new article was found to be about £5 10s. to £6 per ton. The quantity deposited is said to be so considerable that no supposition can be safely ventured upon, and the island, from not being near any coast, is quite free from

the dangers attending the loading at Ichaboe, and other islands on the west coast of Africa, from the setting in of rollers.

A discovery of this description, at a time when so many vessels are lying unemployed at San Francisco, and so many others, idle or seeking, in the Australian colonies, and also in India, we look upon as a means of profitable employment which many others will be likely to take advantage of. The island, it is said, is at present unclaimed by any government, and the British flag was the first banner planted upon it.

For the New England Farmer.

CHEMISTRY—VEGETABLE PHYSIOLOGY.

In a few remarks which I recently transmitted for your valuable and instructive columns, I made allusion to the comparative advantage of a knowledge of the sciences of chemistry and of vegetable physiology to the practical farmer. The opinion was then expressed that the latter science had been too much overlooked, and the former made too prominent, in most of the writings and discussions upon scientific, and improved agriculture. With your permission I desire to pursue the subject of the application of chemistry to agriculture a little further. And I intend here to start a question more for the purpose of having it resolved by some learned chemist, than with any established conviction in my own mind on the point. I believe you will concur with me in considering the question I shall propose of sufficient importance for a full and scientific explanation. The science of chemistry is certain. Its results are not questionable. It is an exact science. But in its application to agriculture, whether to soil or vegetable, there is room for error or mistake. And I make a question here, not of the truth and accuracy of chemical knowledge, but of the logic by which the chemist is guided in his application of chemistry. His reasoning is this. The plant is constituted, in part, of lime; *therefore*, lime must be supplied to the soil, for the aliment of the plant. The grasses and grains are composed in large part of silica, in their stems *therefore*, silica must exist in the soil of your wheat and grass lands, or your crop fails. Now the chemistry of the two propositions is undoubted, but, to my mind, the *logic* is very questionable. The conclusion does not lawfully follow from the premises. Let us try it by two or three examples. The seeds of plants are largely composed of starch;—the tubes of potatoes contain a great proportion of the same ingredient. *Therefore*, starch must be supplied to the soil for all plants, especially for potatoes. Most plants contain sugar; *therefore*, the farmer must administer sugar to the soil. The cow contains in her vessels a large quantity of milk; *therefore*, she must be fed on milk. I think these examples are sufficient to show where, in my view, the uncertainty which I mean to indicate lies. If lime or silica do not exist in form in the soil, the constituents which compose them, or which, when assimilated in the economy of the plant, will compose those substances, do exist there separately, and will they not, separately, form appropriate aliment for the plant? The tissues of the plant constitute a laboratory wherein lime, and starch, and sugar are made, by the assimilating function of the vegetable life, as the vessels of the cow form a laboratory in which milk is, in like manner, made.

The elements of all life, animal and vegetable, exist in the earth. No element has yet been discovered by the scrutinizing analyses of the chemist, which does not exist in the earth. Science proves the declaration of scripture that man was made of the dust of the earth. The elements entering into his physical nature are all there. And so are there found in the earth all the elements of all created things, of all the animal and of all the vegetable world: of all organized matter. Man's bones are composed mostly of lime. But he does not eat lime;—nor is it necessary, in order to sustain his life, or preserve his health. The alimentary organs of animals and vegetables take up the elements, no matter whether connected in the particular form, or existing separately,—and after they are so taken up, they are separated, and made to pass into different parts of the system, as in man the lime into the bone, the iron into the blood, and so on, entering into new combinations as they are received into different parts of the frame. Is not the analogy between the animal and vegetable world complete in this point? Is there any more necessity for feeding plants with lime than cows with milk? Is not the reasoning in this matter erroneous and illogical?

I have suggested this view with a two-fold object. If my question has anything substantial in it, it will show, that the science of chemistry is not entitled to the very prominent, not to say exclusive importance, to the working farmer which has been claimed for it:—and secondly, if my view is incorrect, I hope it will, at least, be considered of sufficient interest to receive an explanation at the hands of some learned chemist. You will agree with me that it is highly important that our working farmers should not be led into error by the guides to whom they look for instruction.

To my mind, a sufficient explanation of the doubt here raised is not found in the fact that the substances are of a different nature. This will be the *ready* answer: Starch and sugar are vegetable products, and milk is an animal product; but lime and silica are earthy, mineral, and, as commonly designated, unorganized matter.

But my view of the processes of nature forbids me to be satisfied with that answer. By the system of permutation and combination, the fifty-five elements of nature, as they become united in different proportions, form different compound bodies. The same elements, united in the same proportion, that form lime, cannot form anything else; and whenever and wherever they become combined they form that substance. They must form it equally in the earth, in the vegetable tissue, and the animal frame. A synthetic process is constantly going on within the earth by which the different elements become united, and by which union, according to the proportions entering into the combination, lime and other compound bodies are formed. Now when the same elements become united in the same proportion, as, by the same synthetic process, they may, in the tissues of the plant, they must there form the same substance, and are incapable of forming any other. Is it not so? Upon this view I base my system of cosmogony. The vegetable creation, "whose seed was in the earth,

after their kind," was formed at the first in this manner. When the particular elements became united in the particular proportions that form an apple seed, or the seed of any other vegetable, that seed was formed in the earth. And the same effect happens now, unless, by the changed condition of the earth, that union can no longer take place. I have introduced this reference to a system of cosmogony, which is, I suppose, peculiar to myself, and which is not essential to the point which forms the subject of these remarks, for the purpose of more fully illustrating my idea of the synthetic processes of nature. According to that idea, if lime or other compound is a constituent of any particular plant, it may be formed within the plant itself, if its elements are introduced into it, and it is not necessary that it should be introduced in the compound form.

By the process which is above supposed, ammonia is supplied to plants. It is manufactured in the vegetable laboratory. This is a mineral matter, not a vegetable product, more than lime. But it is made from its elements in the tissues of plants. The plant takes up carbon, oxygen, hydrogen and nitrogen. The carbon uniting with a portion of the oxygen in the plant and with the oxygen of the atmosphere, passes away in form of carbonic acid. The hydrogen in part unites with the remainder of the oxygen and is evaporated; and a portion of hydrogen remaining enters into combination with the nitrogen and forms ammonia. Thus this earthy matter, the most essential to the growth of the plant, is made within it, no less than the vegetable products of starch, sugar and gum. Is there any reason why lime, potash and soda, should be taken up in form, and should not be formed in the plant, any more than ammonia?

I hope some of your scientific correspondents will consider the point here suggested to be worthy of a full discussion; and will furnish it for your paper. W. J. A. B.

Essex, Mass., 1852.

For the New England Farmer.

WARTS ON PLUM TREES.

Mr. Editor:—Please inform what the cause is of bunches showing themselves on plum trees; whether it is owing to the soil or not?

Springfield, Vt., 1852. G. W. P.

Remarks.—Ascertain the cause and the cure, friend P., and it shall be a snug income to you. We believe the warts are occasioned by insects, but whether the curculio or some other, we have not been able to decide. We have trees growing within a few rods of each other, one portion of which is annually disfigured with warts, while the other portion is smooth and clean.

☞ Graziers in the United States must look to their laurels. An ox raised on Prince Edward's Island was recently sold at St. Johns, Newfoundland, for the sum of forty pounds and ten shillings, or nearly *two hundred dollars*.

☞ The Canadian Agricultural Fair is to be held at Toronto, and will last from the 21st to the 24th of September. The sum of $6000 is to be awarded in prizes.

UNITED STATES AGRICULTURAL CONVENTION.

Before giving the details of the business of the Convention, we shall be excused, we trust, for making a very brief statement of facts relating more particularly to the action of a single State.

Massachusetts took an early and efficient interest in the cause of agriculture. The first association for its promotion *in America* was founded in this commonwealth, in the year 1792, and incorporated by an Act of the General Court of that year. In 1797, this association instituted the *Agricultural Journal*, a publication which continued more than thirty years. It took measures for the institution of county societies, and contributed to the establishment of the Professorship of Natural History, and of the Botanical Garden, in the University of Cambridge. In 1818 began a series of public addresses, pronounced successively at its autumnal celebrations, by John Lowell, Josiah Quincy, Richard Sullivan, Henry Colman, Timothy Pickering, John C. Gray, James Richardson, Edward Everett, Henry A. S. Dearborn, all honored names. The efforts of these pioneers in the work have been seconded and continued to this day by many of their successors with a steady perseverance and a noble enthusiasm. Time, talent and treasure have been devoted with liberal generosity to develop new resources in the earth and air, to propagate new fruits and flowers and perfect those that are indigenous. This enthusiasm has led some of them to the Old World to examine the breeds of cattle, swine, sheep, and horses there, to mingle the blood of the best in the New World and improve the races here. And in the gardens and fields and on the hill-tops throughout the State may be seen the evidences of their philanthropy. The names of Perkins, Phinney, Saltonstall, Wilder, Proctor, D. S. King, Hitchcock, and many others now active in the work may well be ranged in the rank of honor with those who have performed their part and retired from the interesting field of labor.

In 1819, the commonwealth appropriated two hundred dollars annually to every county society which should raise the sum of one thousand dollars for the promotion of agriculture, and in like proportion for any greater sum, not exceeding three thousand dollars. These societies are now fifteen or sixteen in number in the State, all receiving the State bounty, and exerting an influence on our hard and unpromising soil, by reclaiming the bogs and fens and swamps, and laying up its granite in dwellings of architectural beauty as well as comfort; in durable barns for stock, and in spanning the rivers with permanent bridges, which is rapidly changing the surface into delightful landscapes, studded with the farm-houses which

breed men to make honor and prosperity to the commonwealth in all the walks of life.

Besides these the town societies in the State can be exerting scarcely less influence than those of the counties. They are numerous, well attended by practical farmers and earnest men. Their proceedings are often published in the village newspapers, and are thus carried to the fireside of all. With such constant and earnest application of both mental and physical power, well may it be believed that soon shall even the waste places and the "desert blossom as the rose."

During the year 1851, a *Massachusetts Board of Agriculture* was formed, of delegates from the old first society of the State, and from the county societies. The meetings of the Board have always been attended by men eminent either for their learning in geology, chemistry and physiology, or for great experience in the operations of the farm in all its departments. Early in its discussions, the expediency of establishing a *United States Agricultural Society* was suggested, and some of the benefits which might be expected to flow from such an association were considered. On the 14th of January, 1852, the Massachusetts Board requested its President, the Hon. MARSHALL P. WILDER, to enter into correspondence with the presidents of State and other agricultural associations in relation to the expediency of calling a NATIONAL CONVENTION. The result of this correspondence was the gathering of the convention at Washington, whose doings we are about recording below.

As we intend sending a copy of these proceedings to each of the delegates who attended that convention, we have thought proper to preface them with a brief sketch of what Massachusetts has done in the noble cause, to show them that, in honoring one of her sons with the first Presidency of the *United States Society*, she sees in them a just appreciation of her efforts "to improve the soil and the mind." It can scarcely be supposed that any man in the country gives the great subjects of agriculture, horticulture and floriculture, more thought, more time, or more substantial aid than he upon whom the convention bestowed the honor of acting as its first President. He will bring wisdom, large experience, and moderation to its counsels, and exert a powerful influence in preserving the representatives of this galaxy of States in brotherhood and harmony.

The convention met at Washington, in the building of the Smithsonian Institute, at 10 o'clock in the morning, on the 24th day of June, 1852.

Judge WATTS, of PENN., was called to preside over a temporary organization, a roll of the States was called, to ascertain the number and names of delegates representing the various agricultural societies of each State, when it was found that there were present—

From New Hampshire, eight delegates; from Vermont, three; from Massachusetts, twenty-six; from Rhode Island, three; from Connecticut, four; from New York, twenty; from New Jersey, two; from Pennsylvania, five; from Delaware, six; from Maryland, twenty-three; from Virginia, ten; from North Carolina, one; from Louisiana, two; from Ohio, twelve; from Tennessee, three; from Indiana, one; from Illinois, two; from Arkansas, one; from Michigan, four; from Texas, one; from Wisconsin, two; from the District of Columbia, eleven; making the total number of delegates present 151, representing twenty-three States and Territories.

The committee appointed to nominate permanent officers for the convention submitted the following nominations:—

For President—MARSHALL P. WILDER, of Mass.

For Vice Presidents—Henry Wager, of N. Y.; Frederick Watts, of Pa.; Charles B. Calvert, of Md.; Wm. F. Hunter, of Ohio; George W. Nesmith, of N. H.; John H. Throckmorton, of Va.; H. K. Burgwyn, of N. C.; T. J. Rusk, of Texas; James Duane Doty, of Wis.

For Secretaries—William S. King, of R. I.; B. P. Johnson, N. Y.; J. A. Warder, of Ohio; J. D. B. DeBow, of Louisiana.

The report having been unanimously accepted—

Mr. WILDER, amidst much applause, took the chair, and addressed the Convention as follows:

Gentlemen of the Convention:—I will not interrupt the proceedings of this body by any extended remarks from the chair; but I cannot forbear to tender to you my heartfelt gratitude for the honor you have conferred upon me in selecting me to preside over your deliberations—an honor which is connected with a pursuit which has ever laid near my heart.

Permit me also to express my great gratification that there are present so many members representing the agricultural interest of this great Republic—some gentlemen coming from different and distant parts of the Union, at great personal sacrifice; but, whether from the North or the South, the East or the West, I extend to each of you the hand of fellowship, and I greet you as brothers in a common cause.

Gentlemen, we come here with no sinister motives; we have no political arguments to advance; we have no sectional or party purposes to promulgate, but we are here for more important purposes. We are here to advance an art coeval with the existence of the human race—an art which employs eighteen millions of our population, and four-fifths of all the capital in our fair land—an art which lies at the very foundation of national and individual prosperity and wealth, the basis of commerce, of manufactures, and of industrial pursuits. We are an agricultural people; our habits, our dispositions are rural. I rejoice that it is so, and I pray that it may ever continue to be so. Our country embraces every variety of soil, and is capable of producing most of the products of the torrid and temperate zones; and with a suitable application of science to this art, and a wise division of labor, with proper governmental aid, there is no reason why American agriculture may not sustain competition with that of any other nation of the civilized globe.

The progress of agriculture, as you all know, gentlemen, has been slow in the United States, but a new era has now commenced. The old worn-out systems of cultivation which have been followed by father and son, and from generation to generation, are now to be swept away, and science is to take its place in aid of honest industry. I rejoice, gentlemen, that we live at this day; I rejoice that the seed planted by the immortal Washington, and which has been watered by thousands of other eminent agriculturists, is now taking root, and that we live in our day to realize some of the proud results of their hopes.

Much of the progress which has been attained in our country is the result of individual enterprise, aided by the agricultural press; but the great motive power is confederated action, is associated effort. Gentlemen, we have met on this occasion to avail ourselves of this powerful impetus. At no period in the history of our countay has there been such an assembly collected for the purpose of considering those objects for which we are brought together, and there has been no opportunity which is so favorable to the interests of the farmer.

Permit me again, gentlemen, to tender you my thanks for the distinction you have conferred upon me, and to say that in the course of our deliberations I may, with your permission, participate in your debates. [Applause.]

It was then moved that a committee be appointed to prepare a form of constitution for the organization of a United States Agricultural Society, and to report such other business to the convention as may properly claim its attention—said committee to consist of seven members.

Hereupon a long debate ensued, which ended in negativing the motion. Another motion was then made that a committee of one person from each State be appointed, which was agreed to, and thereupon the President appointed the following gentlemen to constitute said committee:—

Messrs. Holkham, of Delaware; Douglas, of Illinois; J. A. King, of New York; Dawson, of Georgia; French, of Massachusetts; Steele, of New Hampshire; Thurston, of Rhode Island; Hubbard, of Connecticut; Stevens, of Vermont; Elwyn, of Pennsylvania; Calvert, of Maryland; Campbell, of Ohio; Hancock, of New Jersey; Callan, of the District of Columbia; G. W. P. Custis, of Virginia; Burgwyn, of North Carolina; Taylor, of Alabama; DeBow, of Louisiana; Spencer, of Indiana; Mallory, of Kentucky; Bell, of Tennessee; Weston, of Wisconsin; McLane, of California; Pickhard, of Maine; Seaman, of Michigan.

Several subjects were then referred to the committee just appointed, and the committee was instructed to prepare a memorial to be presented to Congress relative to an agricultural bureau.

During the absence of this committee from the hall of meeting, several gentlemen entertained and instructed the Convention by delivering interesting addresses on the condition of agriculture in their respective States.

Mr. CALHOUN, of Massachusetts, announced the Marshfield farmer, DANIEL WEBSTER, as a delegate to the Convention; which was received with much applause.

Mr. ELWYN, of Pennsylvania, from the committee appointed to prepare business for the Convention, and report a constitution for the National Agricultural Society, submitted a constitution, which was read, and considered by sections.

Some discussion ensued as to the time and place where the Society shall hereafter meet, when an amendment was adopted providing that the meetings of the Society shall be held on the first Wednesday in February, in the city of Washington, the Executive Committee, with the assent of the Society, to have the power to call meetings elsewhere.

The Convention having adopted the constitution, then adjourned until seven o'clock in the evening.

REPORT OF THE BUSINESS COMMITTEE.

The undersigned, in order to improve the agriculture of the country, by attracting the attention, eliciting the views, and combining the effort of that great class composing the agricultural community, and to secure the advantages of a better organization, and a more extended usefulness among all State, county, and other agricultural societies, do hereby form ourselves into a society, and for its government adopt the following

CONSTITUTION.

SEC. 1.—The name of this association shall be "The United States Agricultural Society."

MEMBERS—DUES.

SEC. 2.—The society shall consist of all such persons as shall signify to any officer of the society a wish to become a member, and who shall pay two dollars to the treasurer of the society and a like sum hereafter, of delegates from the State agricultural societies in the States and Territories and District of Columbia, who may be appointed to attend the annual and other meetings of the society, and who shall pay the like sum, and also of such honorary members as the society may see fit to elect. Each member shall be entitled to receive a journal or publication of said society, containing an account of its proceedings and such additional matter as shall be deemed worthy of publication, free from any expense except postage. Twenty-five dollars shall entitle any one to the privileges of life membership and exempt him from any annual taxation.

OFFICERS.

SEC. 3.—The officers of this society shall be a President, a Vice President from each State and Territory in the Union and from the District of Columbia, a Treasurer, a Corresponding Secretary, a Recording Secretary, and a Board of Agriculture, to consist of three members from each State, Territory, and the District of Columbia, to be appointed by the Executive Committee of the societies of such States, Territories, &c., and where there be no such State societies, to be appointed by the Executive Committee of this society. The President of the society shall be, *ex officio*, a member and President of this board and of the Executive Committee.

DUTIES OF OFFICERS.

The President shall have a general superintendence of all the affairs of the society. In case of his death or inability to discharge the functions of this office, the Board of Agriculture shall select a Vice President to act in his stead, and clothed with the same power, and shall perform the same duties as the President until the next annual election.

Vice Presidents.—It shall be their duty to advance all the objects of the association, in their several districts; to explain to agriculturists the character and objects of this association and endeavor to gain their co-operation and support; to watch the advance of practical agriculture, and to make known the results of the same by report or otherwise, from year to year.

Board of Agriculture.—It shall be the duty of this Board to watch the interests of agriculture, as they are or may be affected by the legislation of the country, and to make such reports, memorials and recommendations as may advance the cause of agriculture, and to promote and diffuse agricultural knowledge; to examine, and when necessary, report upon the practicability of establishing agricultural schools, colleges, and model farms; to set forth the advantages of agricultural and geological surveys, and to show the importance of the application of science to agriculture; to represent through their reports the relation of our agriculture to that of foreign countries and to endeavor to obtain information from such countries, to point out the advantage of introducing any new staples, seeds and plants, to obtain, so far as practicable, annual statistical returns of the condition of agriculture throughout the different States—all which information shall be published by said society, and form part of its transactions.

The Executive Committee shall transact the general business of the society; it shall consist of five persons, who shall designate the time and place for exhibitions, regulate the expenditures, and take such supervisory charge of the business of the society as may best promote its interests. This body shall elect its own chairman. Three members shall constitute a quorum.

Treasurer.—The Treasurer shall keep an account of all monies, and shall pay bills only after they have been audited by the Corresponding and Recording Secretaries, and a member of the Executive Committee, and countersigned by the President of the Society or Chairman of the Executive Committee.

Corresponding Secretary.—The duty of this officer shall be to correspond with persons interested in agriculture; at each stated meeting he shall read such portions of his correspondence as may be of general interest; and it shall be his duty to carry out and advocate the views of the Board of Agriculture in obtaining arranging, and publishing any information they may desire to have laid before the agricultural community.

The Recording Secretary shall keep a record of the minutes of the society and of its Executive Committee.

SEC. 4.—The annual meetings of the society shall be held at the city of Washington on the first Wednesday of February, in each year, when all the officers of the society for the ensuing year shall be elected by ballot. The Executive Committee, however, shall be competent, with the approbation of the society, to appoint occasional meetings to be held at other points. Fifteen members shall constitute a quorum for business.

SEC. 5.—This constitution may be altered at any annual meeting, by a vote of two-thirds of the members in attendance, provided not less than fifty be present.

At 7 o'clock on the evening of the same day, the Convention re-assembled. Very soon afterwards the committee came in with their report. It argued for the propriety and necessity of protection of the agricultural interest equally with the other great interests of the country, and had for its conclusion the recommendation of the establishment of a Department or Bureau of Agriculture by Congress.

Upon this a long and animated discussion took place, in which so much warmth of manner and feeling was at length manifested as to excite fears that the harmony of the meeting might be disturbed. Gentlemen from nearly every part of the Union took part in the discussion. The point of difference was, whether the Convention should memorialize Congress to establish a new Department in the government, viz.: a *Department or Agricultural Bureau*. Under this question many of the important political topics were introduced, such as the tariff, homestead bill, the naturalization laws, and Canadian reciprocity bill.

[At this moment Mr. WEBSTER entered, when the whole Convention cheered with great heartiness, while he was taking his seat. He took George Washington Custis, one of the Vice Presidents, and the nephew of the first President, by the hand, and said in an audible voice, "The Farmer of Arlington."]

After a good deal more discussion the following resolution was unanimously adopted; viz:—

Resolved, That this Convention respectfully request Congress to take action upon the subject of agriculture, and afford such efficient aid as in their wisdom shall be best calculated to advance the great interests of that branch of industry.

Votes of thanks were then passed to Prof. HENRY for the use of the hall, and to the officers of the Convention; mutual explanations were made and the utmost harmony and brotherhood of feeling were restored.

It was voted to invite a co-operation from all the other kindred societies and institutions of the country.

OFFICERS FOR THE PRESENT YEAR.

PRESIDENT:

MARSHALL P. WILDER, of Massachusetts.

VICE PRESIDENTS:

Ezekiel Holmes	Maine.
G. W. Nesmith	New Hampshire.
Henry Stevens	Vermont.
B. V. French	Massachusetts.
Josiah Chapin	Rhode Island.
S. D. Hubbard	Connecticut.
Henry Wager	New York.
Thomas Hancock	New Jersey.
Frederick Watts	Pennsylvania.
Peter F. Causey	Delaware.
W. D. Bowie	Maryland.
G. W. P. Custis	Virginia.
Henry K. Burgwyn	North Carolina.
John Witherspoon	South Carolina.
Thomas Stocks	Georgia.
Richard Jones	Alabama.
Alexander H. Bequeen	Mississippi.
A. B. Roman	Louisiana.
Frederick Kensman	Ohio.
Robert Mallory	Kentucky.
John Shelby	Tennessee.
John L. Robinson	Indiana.
Stephen A. Douglas	Illinois.
R. Atchison	Missouri.
T. B. Flurnoy	Arkansas.
James L. Conger	Michigan.
Simmons Baker	Florida.
Thomas A. Rusk	Texas.
W. F. Coolbaugh	Iowa.
James D. Doty	Wisconsin.
Killburn W. Boggs	California.
J. F. Callan	District of Columbia.
S. M. Baird	New Mexico.
Alexander Ramsey	Minnesota.
Joseph Lane	Oregon.
Joseph L. Hayes	Utah.

EXECUTIVE COMMITTEE:

C. B. Calvert	Maryland.
James A. King	New York.
Alfred L. Elwin	Pennsylvania.
W. B. Newton	Virginia.
J. D. Weston	Wisconsin.

CORRESPONDING SECRETARY:

Daniel Lee	Georgia.

RECORDING SECRETARY:

Robert C. Walker	Pennsylvania.

TREASURER:

William Selden	Dist. of Columbia.

DELEGATES TO THE AGRICULTURAL CONVENTION.

Maine.—Nathan D. Appleton, Amos Pickard.

New Hampshire.—John H. Steele, G. W. Nesmith.

Vermont.—James Meacham, Henry Stevens, E. Seymour.

Massachusetts.—Marshall P. Wilder, Seth Sprague, Benj. V. French, John W. Proctor, Justus Tower, William Parkhurst, John A. Nash, Benjamin Wheeler, Artemas Lee, John Raynolds, William B. Calhoun, John Davis, Charles Allen, John Brooks, Harvey Dodge, Paoli Lathrop, Simon Brown, Zeno Scudder, Benjamin P. Waters, William Sutton, Daniel Kimball, Daniel Adams, George T. Davis, Elisha Mack, E. K. Whitaker, Elijah Perry. Mr. Calhoun, in behalf of the Massachusetts delegation, presented the name of Daniel Webster as a delegate.

Connecticut.—A. Sherman, Isaac Toucey, Norman Porter, S. D. Hubbard.

New York.—Henry Wager, B. P. Johnson, L. G. Morris, C. M. Saxton, Dr. A. T. Watson, Ralph Lockwood, J. A. King, William Kelly, J. G. Floyd, Josiah Sutherland, Jedediah Horsford, J. L. Moore, —— Dickerson.

New Jersey.—Edward N. Dickerson, Thomas Hancock, Reading W. Black.

Pennsylvania.—Frederick Watts, A. L. Elwin, Clayton B. Rogers, G. J. Ball, J. Porter Brawley, P. B. Savery, A. S. Roberts, James Gowen, Wm. Stavely, A. R. McIlvaine, W. Jessup, James Mills, Robert C. Walker, George H. Bucher, Luther Reilly, J. W. Howe, A. P. Wilson, Theophilus Henn, J. C. G. Kennedy, Jesse George, Jacob Grundy, David Derickson,

Delaware.—C. P. Holcomb, T. Jenifer Adams, G. P. Fisher.

Maryland.—J. G. Chapman, Charles B. Calvert, Geo. W. Dobbin, Alex. Kilgour, Edward Stabler, David Brumbaugh, Gen. H. S. Stiles, Geo. W. Hughes, J. H. Luckett, Samuel Sands, Wm. Whitelock, J. Merryman, Jr., John Lee, O. Horsey, Geo. S. Hollyday, Ramsay McHenry, —— Lecompt, Oden Bowie, A. B Davis, Richard J. Bowie, Augustus Shriver, James B. Grayson, Richard S. Mercer, Gideon Brantz, B. A. Cunningham, B. I. Semmes, Wm. G. Bowie, James Mulligen, Thomas Markoe.

Virginia.—John A. Throckmorton, Jas. E. Wharton, Dr. Richard C. Mason, Dr. Thos. Nevitt, Chalkley Gillingham.

North Carolina.—Henry K. Burgwyn.

Georgia.—Dr. D. Lee.

Louisiana.—L. Y. Lusk.

Mississippi.—Jacob Thompson, A. F. Peguees.

Ohio.—Fred. W. Green, Alfred P. Egerton, Norton S. Townshend, W. F. Hunter, John Welch, Lewis D. Campbell, Joseph Cable, John Johnson, John A. Warder, E. Newton, John L. Taylor, D. K. Carter, Hiram Bell, W. Mather.

Kentucky—Humphrey H. Marshall, Gibson Mallory.

Tennessee.—John Bell, M. P. Gentry.

Indiana.—John L. Robinson, Graham N. Fitch, Willis A Gorman, Thos. A. Hendricks, Jesse D. Bright, James Lockhart, Samuel Brenton, Samuel W. Parker, John Spencer.
Illinois.—S. A. Douglas, James Shields, Timothy Dudley, Richard Yates.
Michigan.—E. C. Seaman, Charles E. Stuart, James L. Conger.
Texas.—Thos J. Rusk, James Reilly.
Iowa.—Lincoln Clark.
Wisconsin.—J. D. Doty, J. D. Weston, Chas Sexton.
District of Columbia.—Jos. H. Bradley, Thos. Blagden, Joshua Pierce, C. L. Fleischman, ——— Ewbank, B. O. Tayloe, Geo. Watterston, J F. Callan, O. Whittlesey, F Coyle, DeVere Burr, J. L. Smith, Daniel Saunders, Prof. Henry, D. Clagett, R. Butt, N. P. Causin, J. C. Lewis, Smith Thompson, Chas. J. Stuart, J. L. Carbery, W Bell, H. Martin, Thos Fitman, Flodoardo Howard, Allen Dodge, John H. King, John Tyssowski.

☞ The above-named persons were present at the organization of the meeting; many persons came in and presented their credentials afterwards, until nearly every State in the union was represented.

FLOWERS AND FRUIT.

Cannot friends in the country be induced to take more pains to supply the city with flowers? As soon as the wild flowers begin to bloom, and as long as they continue, why cannot children or others gather them, arrange them in small and pretty bunches, and bring or send them to market? What we want are boquets 3, 6 1-4 and 12 1-2 cents each. It would be more profitable to procure, do them up, and sell them at those rates, than to deal in dandelions, berries, or any of the common country contributions. There need be no fear of overstocking the market. Thousands of persons would gladly avail themselves of such an opportunity of enjoying flowers at an easy rate.

Not only would all the wild flowers command a ready sale; the demand would increase with the supply. Common garden flowers might be added. Many a family in the vicinity would do well by cultivating every variety, and forwarding low priced bouquets to the city. Our great middle class (in respect to pecuniary means) of citizens, who have a taste and love for flowers, are now almost wholly debarred from the possession of them by the limited supply and the consequent exorbitantly high prices demanded. If the whole neighboring country were made a garden, and its sweet, beautiful productions were showered daily upon the city, what a blessing it would be.

Look at the waste land within ten miles of the City Hall; look at the idle hands in an around Boston; and say can nothing be done to bring the two together to the clear advantage of both, and for the benefit of everybody and everything else?

What we have said of flowers is equally true of fruit. Every variety of God's gifts, in the forms so agreeable and refreshing to our appetite and our well being, throughout the summer, might be enjoyed by all classes, as they are now by a few, were the cultivation of them extended, as it should be, and the city favored with a greatly increased supply. We hope a better day is coming in these important particulars. A community abundantly supplied with flowers and fruits, would have a great deal to be thankful for. The steps that may lead to such a consummation are worthy of attention.—*Boston Transcript.*

☞ Porson once boasted that he could write the history of human folly in five hundred volumes. The boast was not unreasonable in his day, but in ours it would make a fool of the man who ventured it.

For the New England Farmer.

FARMING COMPARED WITH MANUFACTURING IN NEW ENGLAND.

BY SILAS BROWN.

Messrs. Editors:—Soon after the revolutionary war very few mechanics could find employment in the country; industrious shoemakers could just supply themselves and families with the necessaries of life, and other mechanics could do but little better; but few people understood the meaning of "chartered corporations," bank notes were not in circulation, and specie not far from out of circulation; young men from the army, and others who had served their country at home, were under the necessity of going into business of some kind to supply themselves with "food and raiment," and under the stimulus of hope, and possessing a good share of hereditary enterprise, they worked for small wages a few years, and then purchased lots of wild land in the back towns of New England, New York, and a few, as far off as Ohio; in this way, and by persevering industry, many of them soon became wealthy farmers, and supplied our markets from their abundance with every commodity conducive to comfort and good living.

The success of these enterprising adventurers induced a regular emigration from the worn-out lands of the old settlements, which hindered the increase of population upon the States bordering the sea coast; this drainage, with the evil experienced during the last war with England, in depending upon Europeans to do our manufacturing, being severely felt by the people of New England and some other States, aroused some prominent politicians to a discussion on the importance and advantage to the country of manufacturing our own fabrics from the productions of our own soil, instead of transporting them to Europe, and then back again, subject to a heavy duty, added to the cost of transportation and manufacturing.

The subject of manufacturing was agitated at large in the journals of the day, till chartered corporations were formed, and the business of manufacturing commenced in earnest. Manufacturing in New England was expedited, in consequence of a protective tariff on foreign imported goods, which brought on a stagnation upon the business of the mercantile class of the community, which influenced them to transfer their capital vested in navigation, to the erection of factories, and manufacturing such articles as they had been accustomed to import from foreign lands. It was thought by many people of good reputation for reasoning faculties, that this manufacturing project, would prove ruinous to the business of the laboring classes of the community, especially the females, who were dependent upon spinning, and weaving, for a support. A short time, however, proved a confutation of all those erroneous reasonings, and the laboring classes, instead of being deprived of work, found their labor in greater demand, with an advance of wages which induced almost all the laboring females to forsake home and friends, to engage in the manufacturing business, so that for many years past it has been difficult to procure female labor in a family establishment for double the former amount of wages. Young men of good reputation whom we could hire, before factories went into operation in New England, for ten or twelve dollars a months, will now command some-

thing like double the amount of wages paid then, beside board, at manufacturing.

Formerly, in the months of March and April, daily applications were made by "native Americans," for the privilege of a summer's work on the farm at such a price that the farmer could sustain himself, but now it is as rare an instance to have a young American offer his services on the farm, as it would be to see a politician decline a proffered lucrative office. As soon as the business of farming will promise an income adequate to support overseers at $2 a day, and laborers at from $1,00 to $1,50 a day, and afford a net income of from 6 to 10 per cent. on the capital employed, farming will become very respectable, and there will be no lack of capital vested in the business, nor educated scientific men to become farmers.

The income of most of the farmers in the towns remote from the cities and large villages, in New England, is entirely at variance with the factory prices for labor. Where is the man who lives remote from cities and manufacturing villages, who depends solely upon the income of his farm, that can afford to pay $2 a day for overseers, and factory wages to laborers, and clear from 6 to 10 per cent. on the value of his farm, stock, and implements of husbandry?

Mr. D., a respectable, industrious and wealthy trader, was very fond of farming; he purchased a farm a little remote from his village, which by his industry and care was the best cultivated farm in the town where it was located; it was generally thought he made it profitable. The farm mania increased upon him, and he bought two more large and excellent farms, appointed overseers, and had them carried on till his stock in trade, his farms and all, were sold to the highest bidder. Thus Mr. D. was reduced from riches to comparative poverty, at farming, under the management of overseers when labor was much cheaper than at present.

Mr. W., a wealthy merchant, bought a good farm, appointed faithful overseers at moderate salaries, and paid strict attention to it himself; he kept accurate accounts of debt and credit, for over twenty years, and the farm fell in debt to him a large sum, I believe over a thousand dollars a year. He expended but little on his farm buildings, as they were better than farm buildings generally average when he purchased the farm; being a rich man he was not at all disconcerted. I could name several other instances within my knowledge, of like results, where farms were owned by able and intelligent gentlemen, engaged in other business at the time, and had their farms managed by overseers.

Here we see the difference between factories conducted by overseers, and farms conducted by overseers. We cannot expect intelligent, enterprising young men, destitute of capital, to prefer the occupation of agriculture, while manufacturing offers inducements of so much greater advantage. If laborers could be hired at European prices, well might the farmers compete with the manufacturers, at the prices they pay for labor, and grow wealthy by the unrequited labor of those whose necessities compelled them to bear the "heat and burden" of the day. S. B.

Wilmington, April, 1852.

Remarks. — Our friend has stated two cases where farms managed by overseers proved failures. We could fill this page with a list of bankrupt manufacturers in New England. We believe that a hundred thousand dollars, or half a million, properly invested in agriculture, and prudently managed, that is, managed with as much shrewdness and intensity of purpose as the large manufacturing establishments are, would yield as much profit through a series of years, and without one-tenth of the risk and vexation, as if it were invested in manufacturing. But farming is often resorted to as the last experiment, without capital or skill, and often without habits of industry. And then, where there is both capital and industry, there is frequently *no skill*, and everything is managed with so little prudence and economy, and so at variance with every true principle of cultivation, that failure is the inevitable result.

The wages of operatives in the mills are varied according to their ability. But it is not always so, or often so, on the farm. Hired men get their ten or twelve dollars a month, when many of them scarcely know a plow from a harrow; and yet under such management complaint is made that farming is unprofitable.

THE GREAT LAND BILL.

The measure known as "Bennett's land bill," (introduced by Mr. Bennett, of the New York delegation,) is one of the most important that has come before Congress, during the present session. It passed the House, a few weeks since, and is now awaiting its fate in the Senate. The bill provides for the distribution of land among the States for educational and other purposes, making the following appropriations:—

States.	*Acres.*
Missouri	3,000,000
Alabama	2,500,000
Iowa	3,000,000
Michigan	2,500,000
Wisconsin	2,500,000
Louisiana	2,500,000
Mississippi	2,000,000
Florida	2,000,000
Arkansas	3,000,000
California	3,000,000
Illinois	1,000,000
Vermont	750,000
Massachusetts	2,050,000
Rhode Island	600,000
Connecticut	900,000
New York	5,250,000
New Jersey	1,050,000
Pennsylvania	4,050,000
Delaware	450,000
North Carolina	1,500,000
Indiana—all the public land not sold, located or reserved, lying within her limits, and in addition thereto	1,000,000
Ohio—all the public land not sold, located or reserved, within her borders, and in addition thereto	2,000,000
Maine	1,200,000
New Hampshire	750,000
South Carolina	900,000
Georgia	1,500,000
Maryland	1,200,000
Virginia	2,250,000
Kentucky	1,800,000
Tennessee	1,800,000
New Mexico	150,000
Utah	150,000
District of Columbia	150,000
Total	58,350,000

The bill provides that Missouri, Alabama, Michigan, Wisconsin, Louisiana, Mississippi, Florida, Arkansas, California, Illinois and Indiana, shall apply their shares to the construction of railroads, and the remainder of the States and the Territories and the District of Columbia are to expend theirs for the support of schools, or for other useful purposes. It passed the House by a vote of 95

yeas to 87 nays. The New England members voted as follows:—

Ayes.—Messrs. Allen, Appleton, Duncan, Fowler, Mann, Thompson and Scudder of Massachusetts; Goodenow, Reed, Smart and Washburn of Maine; Mearham of Vermont; Perkins of New Hampshire; King and Thurston of Rhode Island; Chapman, Cleveland and Seymour of Connecticut.

Nays.—Messrs. Appleton of Maine; Hibbard of New Hampshire.

LIME AND ITS USE IN AGRICULTURE

Lime is one of the most abundant substances in nature—usually as a carbonate, consisting of 56¼ parts of carbonate, and 43¾ of carbonic acid, in 100 of the mineral. In burning, the acid escapes in the form of steam. It is then quick-lime. After exposure to the atmosphere, it absorbs water, slacks, and falls into an apparent dry powder; it is then hydrate of lime, and is in the form in which it is generally used for agricultural purposes. It is the most valuable, when used directly after it has fallen into powder. If long exposed to rain and dews before being spread upon the land, it loses a great portion of its fertilizing powers, which principally consist in its action upon vegetable matters, causing them to decompose, and in its neutralizing power upon acids, which abound in some soils.

The Quantity of Lime to the Acre.—In Great Britain from 100 to 400 bushels are applied at once, at intervals of ten, fifteen or nineteen years—the term which leases run. In this country, the most common practice is to apply 30 or 40 bushels once in three years, which is the preferable mode. We have seen it applied with good effect, however, at the rate of 800 bushels to the acre. This was upon a very stiff, cold clay. Three hundred bushels would be about ten tons to the acre. Ten inches depth of soil, would weigh about 1000 tons. That would give one per cent. of lime. A case is reported in England, of soil upon which 120 bushels of lime had been used, being analysed, which apparently contained the same component parts as that along side, which had not been limed for a great number of years. Yet the limed land produced 20 tons of turnips to the acre, while the unlimed portion only produced two tons, tops and all. This was upon red sand-stone land. One of the effects of lime is, it gives the soil power to absorb ammonia from the atmosphere, and retain that which is disengaged by the decomposition of vegetable matter and manure in the soil. Hence the importance of applying lime with green crops, or using coarse manure with the lime.

Indications of want of Lime in the Soil may be seen in heavy crops of straw, and light crops of grain; and in root crops where they seem to run to *fingers* and seed. Experiments should be made by every farmer with lime, upon various crops in all his fields, to ascertain whether lime would be beneficial to him. Very few places will be found where it will not be so.

To Apply Lime to the Soil, spread it evenly upon a crop of clover about to be plowed under, or sow it upon the surface with the wheat, and harrow thoroughly. It should never be combined with manure, unless the whole is immediately plowed in.

To what Soils is Lime Applicable?—Every clay soil, every peaty soil, and every soil in which vegetable fibre does not readily decay because that is a sign that it contains some antiseptic acid, which prevents decay. This is the case in peat beds and swamps. Sandy, or thin soils, may be overlimed and injured; because, in causing the decay of vegetables, it sets free the ammonia, the very substance of fertility required. To prevent this, more food must be given for the lime to act upon. No farmer, who knows what the action of lime is, upon all soils, will ever do without it, as an accessory to his manure. It is a component part of all crops grown by the farmer. When applied to land which had not borne wheat for many years, it has at once restored it to fertility for that crop. Where it has failed once to remunerate the farmer using it, it has proved of the greatest benefit a hundred times.

Use of Lime with Peat.—The slow decomposition of peat is an objection to its use. By the term, we mean all swamp muck, partaking more or less of that character. All peat contains resinous matter, which prevents decomposition. By adding lime, the resin is combined and forms soap, and the fibre then decays as rapidly as any other vegetable substance.

Lime in the Soil.—Many farms which once produced good crops of wheat, because there was lime enough in the soil to supply the requisite quantity to the grain, have ceased to be productive. They still produce a large growth of straw, but not a remunerating crop of grain. In some instances, such lands have been restored to their former fertility without applying a bushel of lime. Do you ask how? Simply by plowing deeper. In the hard, untouched and unexhausted subsoil, there was plenty of lime lying hid, which only wanted stirring up and exposing to the action of the atmosphere, and bringing within reach of the roots of the plants, to produce the same effect originally derived from the top soil before it was exhausted. Our constant advice will be to use lime, plow deep, subsoil and drain stiff lands, increase your crops, and grow rich, which you will do if you read and heed.—*The Plow.*

For the New England Farmer.

SAVING HERDS' GRASS SEED.

There are several reasons why every farmer should make it a general rule to save his own grass seed. Much of the seed of commerce, either from age or injury, is incapable of vegetation, thereby producing great disappointment and deranging the best laid plans of rotation; it often contains foul seeds, such as white daisy and other pestilent plants, that when once introduced it is almost impossible to eradicate. It is much cheaper; and when raised on the farm is generally sown with a more liberal hand than when bought at three or four dollars a bushel, as is occasionally the price.

I have, for several years, practised the following method, and found it to answer my purpose very well, and it may perhaps be of service to some of your readers. I select a suitable piece that is free from every thing but what I wish to save, and as soon as the seed has become hard, take a grain cradle and cut the heads off as near the top as possible, not taking more than from six to twelve inches, and have a man follow and tie it up into good sized bundles, and another follow him with a scythe and mow the bottom close. Three men, with a boy to carry off the bundles and set them

up four in a place leaning against each other, and spread the swarth if it needs it, can secure two acres in a day, both top and bottom. The bundles should stand in the field till most of the top heads become naked, and then carefully secured. After it is thrashed the chaff should be run through fanning mill with the wind regulated so as not to carry off the seed with the chaff, and then, in order to make it perfectly clean, pass it through a suitable sieve—a coarse wire meal sieve will do, if no better is at hand. Newly cleared lands produce the largest crops, but has to be reaped—after that newly seeded old lands; both require to be seeded thin if for seed. I never stock any land expressly for seed, but always sow clover or red top with herds grass and seed heavy and select a piece after the clover has run out.

On such land that will cut from a ton to a ton and a half of hay to the acre I usually get from five to seven bushels of seed; the bottom makes an inferior kind of hay on which colts and young cattle do well in the winter, and the straw is an excellent litter for horses and cattle. One of the greatest objections farmers make to raising herds grass seed is that it runs the grass out immediately, which is in consequence of leaving a high stubble; but by this method the grass will last, I believe, longer than if cut early. It is a well known principle in vegetable physiology that trees and plants are more likely to die when cut off at a certain distance above the ground than when cut close—a close mowed field will start up quicker and last longer than one that is cut high.

Hartford, Vt. J. L. L.

REVERENCE FOR TREES.

Prof. Park, in his sermon on the life and character of the late Prof. B. B. Edwards, of Andover Theological Seminary, relates a beautiful incident, illustrative of the gentle, genial spirit of that eminent divine. "He bought a half acre of land adjoining his house," says Prof. P., "*principally for the sake of an old oak which grew upon it.* He had long desired to own such a tree—for the oaken wreath is rich with classic associations, and angels of the Lord sat under the oak of old—and many a sermon did he hope to write under its shade." We hope the time is coming, when something of the reverence that is entertained for sacred places, and for works of art, will be cherished towards the trees. Much has been done in many of our towns and villages, within a few years, to remedy the sad error of our fathers, who seem to have supposed that forest trees, like savages, were to be thoroughly extirpated from the soil; but there are yet some barbarians among us, who see nothing in a tree but so many cords of wood. We could point to a certain town in this vicinity—a town, too, whose greatest blemish is a "plentiful lack" of ornamental and shade-trees—where several large and handsome elms, walnuts, oaks, &c., standing in public highways, have been chopped up for firewood, within a short time. It is time this vandal spirit were frowned down, by a purer taste. The Jews of old were forbidden to cut down the fruit trees even of an enemy, (see Deut. xx., 19, 20,) "for the tree of the field is man's life." There are reasons abundant why the same prohibitory care should be extended among us to ornamental trees, and be sacredly observed by the community generally.

AN HOUR IN A SLAUGHTER-HOUSE.

If any of our readers delight in witnessing the effects of *system* in facilitating labor, let them step into a Cincinnati slaughtering establishment during the killing season.

Aside from the prodigious number of hogs, cattle, sheep and calves disposed of there is an interest in watching the machine-like order of the work. The butcher's yard and building is, of course, not a very neat place, while the blood and offal of two thousand hogs a day pass through them. The slaughter-house is situated in some retired hollow, with a small stream passing beneath it, and is generally a cheap, temporary building.

The hogs of each drove are kept in a separate pen till the hour of execution, when a devoted few, say thirty or forty, are compelled, much against their will, to march up a platform within the building. Here, a man with an iron sledge goes among them, and strikes them on the head with a dull, sickening sound, and they fall without a squeal. While in a senseless state, they are thrown upon a grating near the scalding vats, where they are stuck, and the blood flows into the stream below.

The vats are wide enough to place a hog crosswise, and long enough to hold ten or twelve at a time; and there are, in large establishments, two vats, on each side of which are five or six men, making twenty in all. The water is kept hot by steam, and the carcases are constantly kept turning and stirring as they pass along, so that when they reach the farther end of the vat, they are stripped of the hair, and are hauled out and hung up by the heels for gutting.

The man who strikes them puts a mark on the leg of each, to show who is the owner. A hog is pushed from the grating, all quivering and bloody, into the scalding water, about once in half a minute, and a clean carcass is hauled out of the other end of the vat as frequently, and also another taken from the gambrel and carried to the hooks as often, where he hangs till the next morning, to cool. For two vats, about 50 men are required.

The next morning, a four or six horse team appears at the slaughter-house, bright and early, and piling the stiff carcasses into a huge rack, conveys them to the packers. The *butcher*, instead of being *paid* for his expense, pays the *drover* something—eight, ten, or twelve cents a head—for the chance; and all the offal belongs to him, including everything taken from the animal.

At the packer's, which is in a more public part of the city, the hog is weighed, and the two men place his body on a bench. On each side of the bench stand two strong men, with huge cleavers, more dreadful than an executioner's axe, on which they put a keen edge between each blow. One blow given simultaneously by each, severs the head, and also the hind quarters, from the trunk. These are thrown in different directions, to be trimmed and cured.

One of the cutters turns the trunk on its back, and holds it open, while the other splits it along

the back-bone. Each one takes half, and the leaf lard being torn out, cuts off the shoulders, and at four strokes the sides are cut into the proper form. The hog disappears in different directions, and in about half a minute from the time he was put upon the bench, another takes his place to undergo the same process. The pieces destined for mess pork, are salted into a barrel, headed up, filled with brine, rolled into the street, put on a dray, carried to the river, and the hog may be on his way to New Orleans, as pork, within twenty-four hours after he crossed the ferry from Kentucky. Much might be said of the mode of curing, particularly of the celebrated sugar-cured hams; but at present we must omit these details.—*Western Agriculturist.*

For the New England Farmer.

OXYGEN.

BY J. B. M'MAHON, M. D.

As oxygen, in combination with heat, is found to compose the portion of atmospheric air so necessary for animal and vegetable respiration, a due consideration of its necessity and importance to the productions of the earth highly becomes the expert and scientific farmer. It is asserted by the most experienced chemists that oxygen gas or vital air constitutes twenty-seven-hundredth parts of our atmosphere; it forms the principal parts of all acids, hence, the term is derived from the Greek words—*oxus*, which signifies sharp, and *gennao*, to beget. None of the bases which combine with oxygen are alone soluble in water; they cannot consequently be received by the absorbent vessels of plants or roots, until they become acids, when they become part of the food and nourishment of plants. Oxygen and carbon are found quickly to unite by a decomposition of vegetable substances, and this carbonic gas, in its fluid state only, and not in its gaseous state, becomes the food of plants, because their fibres consist principally of carbon and their fluids of water.

Dr. Darwin, the author of the Zoonomia, asserts that, next to carbonic acid, the aqueous acid, if it may be so called, or water, seems to afford the principal food of vegetables; as water consists of oxygen and hydrogen, it is properly an acid, like all other combinations of oxygen; and when absorbed by vegetable roots, becomes in part decomposed in the circulation or secretion of their juices; the oxygen disappears, or contributes to form the vegetable acids; and the hydrogen produces ammonia by its union with azote; which may contribute to vegetable nutriment by its mixture with oils, and thus producing soaps, which become diffusible in water; and also by decomposing insoluble saline earths, as gypsum, or metallic salts, as vitriol of iron; and which forms a part of the various productions of sugar, honey, wax, resin, and various other secretions.

After thus attentively considering the power and influence of atmospheric air on vegetation, the nature of different soils respecting their constituent parts, the latent fire contained in all created matter in a greater or less degree, which the ancients called the *animamundi*, our moderns call it caloric, or a principle of electricity, but, which I take to be the celestial *medium*, by which, at the creation of matter, all its parts were impregnated by omnific power, and consequently became the elastic basis of matter; I said after having considered these first principles, the most proper mode of ameliorating the respective soils should next, in my opinion, claim all the research and ingenuity of the industrious farmer. The Chinese, the Egyptians and Romans, found means of purifying certain soils by burning, as will be seen by the following:

> "Long practice has a sure improvement found,
> With kindled fires to burn the barren ground
> When the light stubble, to the flames resigned,
> Is driven along, and crackles in the wind.
> Whether from hence the hollow womb of earth
> Is warmed with sacred strength for better birth;
> Or, when the latent vice is cured by fire,
> Redundant humors through the pores expire.
> Or that the warmth distends the chinks, and makes
> New breathings, whence new nourishment she takes;
> Or that the heat the gaping ground constrains,
> New knits the surface and new strings the veins,
> Lest soaking showers should pierce her sacred seat,
> Or frezing Boreas chill her genial heat,
> Or scorching suns too violently beat."
>
> *Dryden, Virg Geor. 1st.*

Granting that modern agriculturists hold different opinions respecting the general good effects from burning, this diversity in their opinions may arise from a want of system or order in their respective mode of management, because its good effects are pretty generally acknowledged. When argillaceous earths are burned, they become of a sandy nature, and that brick, when only moderately heated, sticks to the tongue, which effect it will not have when perfectly burned. The reason of the first effect is from the humidity which it absorbed, but which in the latter case it no longer possessed.

Felspar contains calcareous earth, silicious and aluminous earths, together with a fixed alkali and the oxyde of iron. If reduced to an impalpable powder, it will resemble the argyle, and being strongly heated, will melt; if only moderately heated it forms a kind of paste, which, when broken, resembles sand. The conclusion to be drawn from the above effects is, that by burning, the soil is rendered less compact, less tenacious and less adapted to absorb the water and humidity of the atmosphere; consequently, low, humid and swampy soils, in order to give them a tone and susceptibility for vegetation, should be heated and thus pulverized. The above reasons seem to me conclusive against the objections of those who maintain that, together with destroying the vegetable and animal matter, the fire, in other respects, also serves to impoverish the soil. With these I perfectly agree in the abstract, and that is, if not properly and scientifically applied to such soil as requires that mode of treatment as the best and easiest mode for its amelioration. Hence can be justly appreciated the extensive use of chemical deductions in the *wide* field of agriculture. In truth it is the broad and solid basis on which it is naturally founded. But if the conclusions carried out in any science, be found to vary in any material point from the *data* or its first principles, there will appear, either something defective in the system itself, or a criminal deviation from its assumed and established principles. So in agriculture, the amelioration of the different soils must be systematically followed up, according to their elementary constituents or component parts, as above specified in one or two instances.

We have only to look on two adjoining farms (admitting no disparity of soil;) one we see to produce abundant crops, and amply to recompense the labor and toil of the farmer, while that of his less

fortunate neighbor shews all the marks of sterility. He may labor with equal if not more assiduity, but the question is, does he labor scientifically? Because to labor advantageously, he should study to attain the science peculiar to his pursuits. The good effects derived from irrigating certain soils depend chiefly on chemical and mechanical causes. Water to produce vegetation is essentially requisite. Land which during winter and spring has the necessary supply of water, acquires a nourishment which it produces during the summer, and becomes highly necessary during the summer heat for vegetation. If the water flow over calcareous earth, it will be found of incalculable service. So will river water, as containing a great quantity of organized matter, if the river flow through a cultivated country. Fallows are considered generally of the greatest importance to the farmer for many reasons; they mollify the ground, they deprive it of excessive humidity and open it for the action of atmospheric air, they purify it from weeds and much redundant matter, particularly when it is not of a nature to admit the action of fire. Many, against this excellent practice of making fallow ground, are wont to give some lame or unreasonable excuse, all which have a greater tendency to protect idleness than to stimulate industry. I am ready to admit that it is not every kind of soil which receives benefit, by being turned up in the autumn; this, to all farmers, is already well known. Here the farmer must be left to his own discretion and experience. The earth which we find in the soil, if I may so express it, of some fallow ground, does not combine with oxygen or azote, but that which unites with carbonic acid is found in abundance. Nitrous salt is copiously produced, by thus exposing vegetable and animal matter to the action of the atmosphere; the azote, thus absorbed, forms ammonia, which is useful for vegetation. Notwithstanding some other objections to the making of fallow ground, it must be admitted that the action of the sun on its surface will not be without a good effect. When the ground is not employed by producing nourishment for cattle, it should be employed otherwise, advantageously, so as to become a nourishment or manure for itself. This can be done by many artificial means; such as artificial meadows, as in England, Scotland, and many other countries. The inhabitants of Sweden pay more attention to the irrigation and manuring of their lands, than any other people mentioned in the history of Europe. France is far behind England in point of agriculture, but the industrious Swede, in this science, has no competitor. Agriculture, in Sweden, is not only patronized by the government, but also receives every possible encouragement; notwithstanding their long winter, which is full nine months, it is really astonishing to find how rapidly they advanced since the year 1840. They were tributary, at one time, to Poland, whence they received their wheat provisions. They now export in grain more than half what they consume. The peasant is no longer obliged to mix the powdered barks of trees with his flour to make bread. The report of what they sow to the produce of wheat, is from one to eight, and variously from one to six. That of potatoes is from one to eleven. They have appropriate agricultural schools in Stockholm, the capital, and in different parts of the provinces. Their system, in time of peace, is to transfer the soldier into a cultivator. Each soldier has a house, stable and barn, and five acres of land to cultivate. Thus in the space of a few years the Swedish government, and individuals of every rank, by a noble emulation, in all departments of agricultural pursuits have rendered themselves independent of their neighbors and given to the world an example of industry well worthy of imitation. The earth is man's domain, but without agriculture it would remain sterile. 'Tis the first science according to this world, and the science of the first man. It is the nourishing mother of all industry. By it man turns to his own profit the soil and all its various productions, with its minerals and metals, and all the animals which live on its surface. If by medicine man may be succored in his infirmities, is it not to agriculture that medicine owes her most energetic and efficacious remedies? That all riches come from the earth, is an old and solid *axiom*; wishing, therefore, that it may be abundantly realized by the industrious farmer, I remain his sincere friend,

Boston, June 20, 1852. J. B. M.

TIME OF CUTTING GRAIN.

As we have often stated, all grain should be cut before it becomes full or dead ripe—when the stem becomes yellow or arid four or five inches below the head, it should be cut; for from that period the grain receives no benefit, as the sap cannot circulate beyond the arid line. It may be set down as a safe rule—CUT FROM 7 TO 10 DAYS BEFORE THE GRAIN IS DEAD RIPE. If cut at this period, there will be but comparatively little loss from shattering; the grain will be more in quantity, better in quality, and make better flour, and what is not less important, save it from rust, while the *straw* will be greatly enhanced in quality as stock-provender.

Upon the subject of early cutting, we will copy two extracts which we gave in our July number of last year, in order that our new subscribers may have the benefit of them.

M. Cadet de Vaux, of France, has recommended as an important innovation the reaping of corn [small grain] before it is perfectly ripe. This practice originated with *M. Salles* of the Agricultural Society of *Besiers;* grain thus reaped (say eight days before it is ripe) is fuller, larger and finer, and is never attacked by the weevil. This was proved by reaping one-half of a piece of corn-field, [wheat] as recommended, and leaving the other till the usual time. The early reaped portion gave a hectolitre (about 3 bushels) of corn [wheat] more for an acre of land than the later reaped. An equal quantity of flour from each was made into bread; that made from the corn [wheat] reaped green gave 7 lbs. of bread more than the other in 2 bushels. The weevil attacked the ripe, but not the green. The proper time for reaping, is when the grain pressed between the fingers has a doughy appearance, like bread just fresh from the oven when pressed in the same way.

Upon the same subject, Mr. *John C. Reid*, of *Laporte, Indiana*, gives the following as his experience:—

"The first when cut was in dough, the last very ripe. The first cut weighed 65 lbs. per bushel; the last 60 to 63 lbs. The first made the finest flour, and the greatest quantity to the bushel."—*American Farmer.*

THE VIRGINIA REAPER.

While at Washington, recently, to attend the Agricultural Convention, in company with Mr. RAYNOLDS, one of the proprietors of this paper, and a large company of other gentlemen from various parts of the country, we spent an afternoon in the examination of *McCormick's Patent Reaper*, the instrument that gained a world-wide celebrity at the World's Fair at London last year. Crossing the eastern branch of the Potomac, near the Navy Yard, we found on the opposite side at Giesborough a field of from sixty to seventy acres, covered with a fine crop of wheat which would average as we should judge fifteen or sixteen bushels to the acre. Three fine mules were hitched to the Reaper, and in exhibiting through the day, and on previous days, some forty acres had been cut. The field presented a clean and workmanlike appearance, the scatterings being rather more liberal, perhaps, than when grain is cradled. The machine requires a driver and a person to rake the grain from the platform in parcels of a size proper for binding, both of whom ride. Fifteen acres a day is considered a fair average on favorable ground—several acres more may be cut with a little pressure—but that number of acres may be handsomely cut from day to day. The grain is raked from the platform of the machine with the heads all one way, and in parcels quite as convenient for binding as when cradled.

The operation of the Reaper seemed to be satisfactory to the numerous gentlemen who witnessed it, many of whom were large planters, and of course much interested in a machine that has promised to do so much in the grain harvests of the south.

We considered the exhibition a successful one.

For the New England Farmer.

NO PROFIT IN FARMING.

How often do we hear the complaint made, by persons in possession of small farms, that there is no profit in farming, and those possessed of large ones, not unfrequently, offer the same plea, viz., that it costs all to live. With pride they refer to the good old times of our grandsires, when, they imagine, farming was more profitable than now; and not a few are willing to lay the charge to the administration of our government, for all this supposed degeneracy in the occupation of the farmers, and consequently turn politicians, for the time being, in hopes to overturn the present administration, install another in its stead, for the purpose of bringing round the aforesaid imaginary good old times.

But, how can it be proved that farming was ever better than at the present time? Was there ever five years in succession when the farmer could dispose of his butter, cheese, meats and potatoes, and finally the general products of his farm, for more ready cash than for the past five years? or was there ever a time when he could purchase the necessaries of life cheaper than during the same period, aside from the tedious horse-back journey of former times, compared with the facilities of railroad communication? Certainly I believe the answer should be no.

The fault, then, is not in the administration of the government, nor in the high prices of the necessaries of life, or in the low prices of the farm produce. Then we must look elsewhere for the evil which I believe lies at the farmer's door, or at least, in the customs and fashions of the times.

What a contrast presents itself to our view, when we compare the nicely finished buildings of the present with the humble dwellings of our grandfathers; this is all very well, but the farmer should remember they cost money. The necessaries of life (if we may so term it) have multiplied almost to infinitude; instead of subsisting upon the products of our own soil, we tickle our palates with those of nearly every clime; this will do if it does not interfere with the constitution, (as the politicians say,) and the farmer can afford it, but remember it costs money. It was very different with Sir Balaam, of whom the poet speaks,—

> "One simple dish his week-day meals affords,
> An added pudding solemnized the Lord's."

Fashion has done much to drain the profits of the farmer—the homespun cotton and woolen dresses of our ancestors have given place to the variegated webs of Thibet and Hindoostan; the farmer's daughters must dress and shine in all the variety of the bride of a millionaire; they must attend dancing schools and cotillons, which the more frequent, require the more frequent changes in apparel; changes which have become as important as changes in the moon. His sons, too, if willing to assist in filling his granary with the products of the soil, are frequently equally willing to relieve him of the contents of his pocket.

Let farmers, then, view the subject of their own occupation in its true light, nor look abroad for the cause of evils when it may be found at home.

If the farmer manages his business well, his income is very considerable, but his expenses may exceed it; could he adopt the strict economy of our early settlers with his present income, I believe we should very seldom hear the complaint of *no profit in farming*.

H. FOWLER.

Stowe, July, 1852.

REMARKS.—Yes; these are all true reasons, and there are plenty of others which we hope our correspondent will allude to hereafter.

THE PEEL OR RIND OF FRUIT INDIGESTIBLE.

This fact cannot be too strongly impressed upon the public. It applies to all fruit without exception, and includes also the pellicle or skin of kernels and nuts of all kinds. The edible part of fruit is particularly delicate, and liable to rapid decomposition if exposed to the atmosphere; it is, therefore, a provision of nature to place a strong and impervious coating over it, as a protection against accident, and to prevent insect enemies from destroying the seed within. The skin of all the plum tribe is wonderfully strong compared with its substance, and resists the action of water and many solvents in a remarkable manner. If not thoroughly masticated before taken into the stomach, the rind of plums is rarely, if ever, dissolved by the

gastric juice. In some cases, pieces of it adhere to the coats of the stomach, the same as wet paper clings to bodies, causing sickness and other inconvenience. Dried rasins and currants are particularly included in these remarks, shewing the best reasons for placing the fruit upon the chopping board with the suet in making a pudding of them, for if a dried currant passes into the stomach whole, it is never digested at all. When horses eat oats or beans that have not been through a crushing mill, much of this food is swallowed whole, and in this state, being perfectly indigestible, the husk or pellicle resisting the solvents of the stomach, there is so much lost to nutrition. Birds, being destitute of teeth, are provided with the apparatus for grinding their seed, namely, the gizzard through which the seed passes, and is crushed prior to digestion. The peels of apples and pears should always be cast away. Oranges we need not mention, as this is always done. Orleans, greengages, damsons, and all plums, should be carefully skinned, if eaten raw; and if put into tarts, they should be crushed before cooking. Nuts are as indigestible as we could desire, if the brown skin be not removed or blanched, as almonds are generally treated.—*Er.*

THE CAPITOL—WASHINGTON.

Every good citizen, native or adopted, must feel an interest in his country, whether it be in her future glory and the perpetuity of her institutions, or in the impression which she makes, and is to make, on the mind of the foreigner who visits us, or on the world, who only know us by representatives from our shores, or by common report; that interest we feel, sensibly. That what our country is to be, depends somewhat on us, as it does upon every good citizen. We feel that a portion of the public domain is ours—paid for by the blood of our ancestors and by the toil and sweat of our own brow, and, like our fireside and the loved ones around it, is as dear to us as the best blessing which Heaven has vouchsafed to send. We boast no peculiar patriotism—the feeling is as common as the air we breathe; it inspires millions of hearts at this moment with the true principles of liberty, and with as much heroic daring as was manifested by the noble souls of the revolution. We believe in a progress every way that will elevate the condition of man; in wisdom to keep himself out of war, and in unflinching resolution to pursue it when compelled to fight for his freedom and all that he holds dear.

But we have wandered from the subject—it was *Uncle Sam's Farm* that we meant to speak of, and not his battle-fields. The latter will be defended better, we fear, than the former will be cultivated and improved.

In a ten years' residence at the Capitol of the Union we could not help gathering something of the feeling of those who came there to represent States, in relation to that portion of teritory set apart as neutral ground for the transaction of the business of the nation. With a jealous eye to the unbiassed action of the representative, the citizens of that territory are disfranchised, having a vote only in their municipal affairs. But with this restriction, there are those who think that money is expended too lavishly at this central point, and that its citizens reap too freely of the people's contributions.

The population in the city of Washington has nearly or quite doubled in the last ten years. The public buildings, projected at first on a scale of cost and magnificence before unknown in this country, have been continued with liberality, and with a high sense of the dignity and importance of the nation. Some of the buildings are still in an unfinished state, but as more room is needed by the government, the original designs are carried out. The Treasury building, with the longest colonnade in the world, is still unfinished; the Patent Office, the centre of which is constructed of sandstone, is now receiving an addition of two wings of white marble, which, when completed, will make a structure scarcely surpassed by any of the buildings in the Old World. The General Post Office is a large and beautiful edifice, constructed also of white marble.

The capitol was commenced in 1793. Including the circular terrace, it covers upwards of two acres of ground, and has cost *two millions of dollars*. The length of the front is three hundred and fifty-two feet, depth of its wings one hundred and twenty-one feet, east projection and steps sixty-five feet, and west projection and steps eighty-three feet. The building is decorated in several parts by fine statuary and paintings. On the west front is a monument commemorative of the awful catastrophe in the harbor of Tripoli in September, 1804, when the Ketch Intrepid was blown up with her officers and crew of thirteen as gallant souls as ever trod the deck of a ship. The column, ornamented with the prows of Turkish vessels, rests on a base, on one side of which is sculptured a view of Tripoli and its fortresses in the distance, the Mediterranean and the American fleet in the foreground. On each of the other sides of the base are inscriptions, one containing the names of the officers who so heroically sacrificed their lives on the occasion, and the other the epitaph, &c. There are also, other appropriate and spirited figures. On each side of the east entrance there is a colossal figure in marble representing War and Peace. The rotunda occupies the centre of the Capitol. It is ninety-six feet in diameter, and ninety-six feet high to the ceiling of the dome. This is terminated by a cupola and balustrade, accessible by means of a staircase passing between the roof and ceiling. From this elevation the prospect which bursts upon the eye is most splendid. Three cities are spread before you; the Potomac on one side and the Eastern Branch on the other, uniting and rolling their waters to the ocean; a range of

hills extending in a magnificent sweep, and displaying all the richness and verdure of woodland scenery.

The interior of the Rotunda is ornamented with *alto relievos* sculptured in stone panels and with historical paintings. The subjects of the sculptured panels are, 1st, The preservation of Captain Smith by Pocahontas; 2d, The landing of the Pilgrims at Plymouth; 3d, The conflict between Daniel Boon and the Indians; and 4th, Penn's Treaty with the Indians.

The paintings, by TRUMBULL, which fill the large panels, are, 1st, The Declaration of Independence; 2d, Surrender of Burgoyne; 3d, Surrender of the British Army, commanded by Lord Cornwallis, at Yorktown, in Virginia, October 19, 1781; and 4th, The Resignation of General Washington at Annapolis, Dec. 23, 1783.

Another panel has been filled by an exquisite painting of the Embarkation of the Pilgrims, and another no less beautiful of the Baptism of Pocahontas. As will be seen, these paintings represent the most intensely interesting historical scenes, and the eye of the visitor is riveted to them as by a charm. They are worthy the study of days, instead of the hurried moments usually devoted to them, and the visitor, wearied with the ascent to the dome and the inspection of the various halls and rooms, turns again to these pictures to refresh his mind with a last look and fix them upon his memory.

The Hall of Representatives is a magnificent apartment, in the form of an ancient Grecian theatre; is ninety-five feet in length, and sixty in height. Twenty-six massive columns and pilasters of Potomac marble, the capitals of which are of Italian marble, executed in Italy, support a magnificent dome. The Senate Chamber is semi-circular in its form, 75 feet in length, and 45 feet high. The Library, (which is now a mass of ruins,) the Supreme Court Room, Speaker's Room, and the Room of the President of the Senate, are all in a style suitable to the parts we have mentioned.

The government is now adding two new wings to this already imposing and magnificent structure, and it was of this, and the grounds about the building, that we intended to speak when we began this article. These wings will occupy the whole space between the present building and the streets upon which the grounds abut, so that when completed, the windows of the Senate Chamber on one side, and those of the House of Representatives on the other, will look directly down upon the street where the carriages and teams are constantly passing, and where noise and confusion would constantly interrupt the business of the session. They must have more room. The present grounds about the Capitol comprise thirty acres. These are laid out with taste, ornamented with pools and jets, and filled with most of the trees common to our climate, and the whole surrounded with a substantial iron fence upon a stone basement.

There is no longer need of parsimony in the construction of our public buildings or in the embellishment of their grounds. They should be constructed and ornamented in a style and spirit corresponding with the magnitude and ability of the nation. The Capitol of these States should represent, in some degree, their extent and power. In order to accomplish this, the government should at once purchase and add to the public grounds about the Capitol, fifty or one hundred acres, taking in the squares on the north and south of the Capitol and extending down East Capitol Street one or two squares. This should be DONE NOW as a MATTER of ECONOMY. It will be done at some time, and if delayed the expense will be enormous, if the purchase is postponed until the squares are filled with buildings, and become highly improved.

We make these suggestions hoping that others will roll on the ball, believing that in noticing this portion of Uncle Sam's homestead we have not travelled out of our legitimate sphere.

For the New England Farmer.

THE JOINT WORM.

BY PROF. T. W. HARRIS.

SIMON BROWN, ESQ.:—Dear Sir,—It would give me much pleasure, in complying with your request, to be able to point out any effectual remedy for the damage done to the growing wheat of the Southern States by the joint worm. F. G. Ruffin, Esq., the editor of the *Southern Planter*, informs me that the ravages of this insect "have been more aggravated this spring than ever before, ruining many wheat crops utterly, and curtailing others to at least one-third of an average crop." My means for studying the history of this insect have hitherto been very small, having been limited to the specimens of diseased wheat straw sent to me by Mr. Ruffin last March. I was not aware of the existence of the insect at the South, and of its ravages, before accidentally reading the *Albany Cultivator* for October, 1851, containing an article upon it by Dr. Asa Fitch, of Salem, N. Y. This article led me to suspect that the insect might be the same as that which attacks barley straw in New England, a suspicion that has been fully verified both by myself and Dr. Fitch. But the history of the barley insect is confessedly imperfect, no opportunity for completing it having occurred to me since the publication of my first account of it, on the 23d of July, 1830, in the old and excellent *New England Farmer*.

A large portion of the diseased wheat straw, sent to me by Mr. Ruffin, was transmitted to Dr. Fitch, in the hope that, between us, something definite concerning the origin of the injury might be obtained. Both of us, however, have come to the same result, which does not, as yet, extend the bounds of our knowledge. About the first of May, insects began to come forth from the diseased straw, and continued to issue during ten days or a fortnight. Their appearance was probably accelerated by the straw being kept in a

glass jar in the house, instead of being exposed to the open air abroad. All of the insects except two were identical with specimens obtained from diseased barley straw in the spring of 1830, and all of them were females. To the barley straw insect I gave the name of *Eurytoma hordei;* and the same name must be applied to the insects obtained from the diseased wheat straw. They belong to the *Chalcidian* family, consisting of various kinds and species of small Ichneumon flies, all of which, so far as their habits have been observed, are parasitical, or live in their grub state within the bodies of other insects. Two of the wheat straw insects were smaller specimens, belonging to the same family, but to the genus *Pteromalus*. Not one species in this family has ever been known, hitherto, to differ in habits from the rest; hence all of them are supposed to be parasitical. Reasoning from analogy, therefore, when the *Eurytoma hordei* was first obtained from the barley straw, I inferred that it was a parasitical species, and that the maggot in the straw from which it is developed was the young or larva of an unknown species of *Cecidomyia*, the real cause of the injury to the straw. The Hessian fly and wheat fly are species of *Cecidomyia*, and both of them, in the maggot state, are preyed upon by Chalcidian parasites, which are transformed to tiny four-winged flies. These, being often seen in great numbers in the wheat fields, where the maggots of the Hessian and wheat fly have carried on their ravages, have been frequently mistaken for the parents of the real culprits. What has hertofore happened may happen again; and, as no person, so far as I can learn, has yet succeeded in raising any species of *Cecidomyia* from the diseased barley straw, or from the joint-worm of the southern wheat, the *Eurytoma* is likely to be charged with being the cause of the mischief done to the stems of these plants. It remains to be seen, from full and careful observations, made on the wheat and barley at various times, whether such charge can be sustained. I am indifferent to the result, if only the truth can be arrived at and made known; hoping that thereby some means for arresting the ravages of the insect, whatever the latter may be, may soon be discovered.

Mr. Ruffin has already been referred to my account of *Eurytoma hordei* in the *New England Farmer*, and in my work on insects injurious to vegetation, which may be consulted by others, also, who are interested in the subject. To this account, I have only to add another fact and a single suggestion.

It is well known that barley straw is occasionally made use of, in New England, for summer beds. Children and other persons, sleeping upon these beds in May and June, sometimes suffer from irritating bites or stings, which are found to be made by swarms of the *Eurytoma* issuing from the straw, and coming through the ticking. A case of this kind fell under my own observation a few years ago. To remedy this inconvenience, straw should not be used for beds until it is more than one year old, by which time all the insects will have escaped from it.

Dr. Fitch seems to think that the joint worm, which he examined, was a genuine larva of a *Cecidomyia*, a circumstance which coincides with my own impressions concerning the maggot in the barley straw. Part of the brood of joint worms, or maggots of the wheat and barley straw may escape being attacked by the *Eurytoma*, and may complete their transformations during the first summer, at which time they do not seem to have come under the notice of naturalists; while another portion of the brood, falling a prey to the *Eurytoma*, may perish without change, or give issue only, at a later period, to swarms of the parasitical flies that alone have been hitherto seen.

Cambridge, July 10, 1852. T. W. H.

For the New England Farmer.

VERMIN ON HOGS.

Mr. Editor:—Sir,—I do not remember to have seen in any papers of our country an account of lice on hogs; therefore I wish you to inform me through this paper what will effect a cure. I have tried various methods, but nothing seems to do any good. I would inquire whether any remedy has been discovered to your knowledge that has proved effectual? A Subscriber.

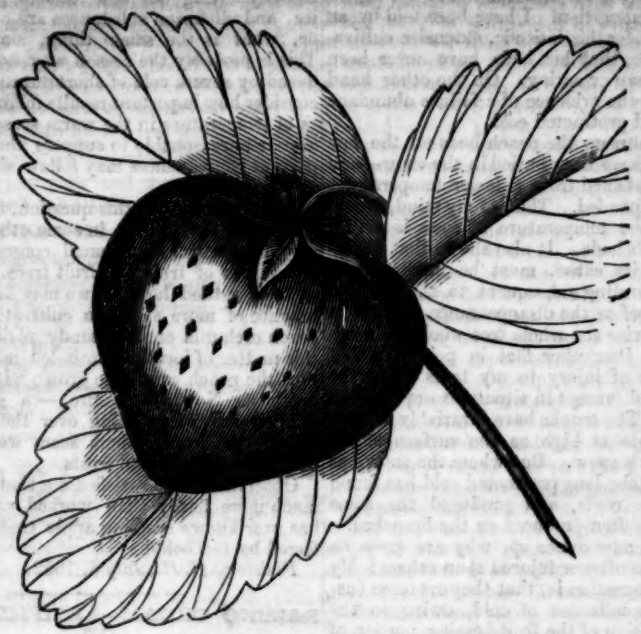
Braggville, July 5, 1852.

Remarks.—Good keeping, a wet place to wallow in when they see fit, and a dry, clean bed always to go to when they please. These are indispensable. Then, as all creatures have their parasites, or lice, we must do something else. Scatter, occasionally, a small quantity of ashes or unslacked lime in their sleeping apartment. Take the suds of the wash and pour over them once or twice a month, following it up by scratching them with a piece of sheet iron four inches wide and five inches long, notched like saw teeth on the sides with blunt teeth, and nailed to the end of a handle of convenient length. Rub them with buttermilk, or grease occasionally, and if some one or all these do not prevent the vermin from troubling your swine, then they are models of perseverance, and ought to have a fair chance for a living with the rest of us!

All these operations are good for the animal if he has no vermin, so that nothing is lost, whether they are exterminated or not.

While speaking of swine, we will mention a matter too commonly overlooked by the farmer; and that is neglecting to give them, daily, a feed of short, succulent, tender grass. We have known a number of swine, in pens, nearly supported through the summer by giving them the grass from a lawn, which was kept clean and mowed once in six or eight days; they were not only supported, but gained well. They like the weeds from the garden, and will make them take the place of much meal if they can but get at them.

Clover Seeds in One Cubic Inch.—A correspondent says the number of clover seeds contained in one cubic inch, is 9,053. In that ratio, one bushel contains 19,466,571 seeds. Allowing a man to count one hundred per minute, and to work ten hours per day, it would require 324 days, 4 hours, 35 minutes, and 42 3-5 seconds, to enumerate them.



HOVEY'S SEEDLING STRAWBERRY.

THE STRAWBERRY.

Strawberry plants may be set in the spring or in the month of August, and will do well set at either time if properly cultivated. The land should be prepared by liberal manuring with any of the common kinds of manure, deep plowing and thorough pulverization. They should be set fifteen to twenty inches apart each way, according to the quality of the land, and so as to leave room to work among them.

In his fruit book, Mr. Cole advises "the first season to keep the land well cultivated, and free from weeds, stirring the soil often. The next spring thin the plants when too thick, destroy all weeds, and stir the soil, but not after the plants blossom. After hoeing, and before the plants have grown much, spread among them straw, saw-dust, sea-weed, or leaves, to keep the berries free from grit and the land loose and moist. This will decay and form manure." In rich and rather moist land, where the soil is deep and the surface kept loose and free from weeds, a good crop of strawberries may be expected with as much confidence as a crop of beans or peas.

There are many varieties, but only two or three much in use. The variety represented at the head of this article is extremely large, the flesh firm, with a rich sprightly flavor, and producing fruit from the twentieth of June into July. It is a great bearer, hardy and vigorous, and easy to pick. The Early Virginia is usually cultivated with Hovey's Seedling. It is rather large, very juicy, and of excellent flavor. Mr. Cole thought it the best early strawberry known in this section. Then there is the Boston Pine, the Duke of Kent, the Wood, the Black Prince, Jenney's Seedling, and many others, but most of them hardly worth experimenting on.

For the New England Farmer.

WHAT KILLS THE BUDS AND TREES?

Mr. Editor:—I have been interested in the above inquiry by your associate, and also in an article of your own, in the last number of the *Farmer*, relative to "the effects of the late severe winter upon vegetation." If very strongly opposed to agitation, I should come out against the farther discussion of this subject *in toto*. It is no great favor to be continually reminding one of his *buds* that wont blow, and of his *trees* dead past all recovery. After we have got some of the finest of our trees fairly packed away at the bottom of the brush-pile, can there be any *particular* use in so often touching up one's recollection by inquiring "what killed um?" But the subjects are now disinterred, and we may as well see that they are fairly dissected.

After a careful examination of my own trees, as well as taking some pains to learn the experience and conclusions of others, I have come to be pretty well satisfied that the results under consideration are mainly attributable to long protracted severe cold. The following are some of the reasons that have led me to adopt this opinion.

The buds and trees never fail after a mild winter, unaccompanied by severe cold of considerable

duration. This would not be the case if the injury was caused by frosts in autumn and spring, or by excessive evaporation. I have been told by an intelligent, and, for this latitude, extensive cultivator of the peach, that his buds have never been injured in autumn or spring. On the other hand he always finds the evidence of a failure abundant after severe and protracted cold.

In my own nursery the peach buds on the low branches that have been buried in the snow—and in that way protected from a lower temperature, have always expanded. This, to my mind, is conclusive, that the temperature of snow is not injurious to peach buds. It also shows that the injury, whatever its cause, must be attributed to some agent operating subsequent to the frosts of autumn, and before the disappearance of snow in spring,—otherwise the whole tree would be similarly affected. One other fact in point is, that in no instance of injury to my trees have the roots been killed, except in situations unprotected by the snow. The trunks have invariably thrown out strong shoots as high as the surface of the previous winter's snow. But where the snow has been blown off, the long protracted cold has found its way to the roots, and produced the same effect that is so often produced on the branches.

The question now comes up, why are trees on our sandy plains oftener injured than others? My answer to this question is, that they are more susceptible of the influence of cold, owing to the immature condition of the fruit-bearing portion of the trees when overtaken by the winter. In addition to this it should be borne in mind that the cold is more intense in such locations. An elevation of ten feet is said, by some who have tried this experiment, to be equal to a degree of Fahrenheit. If any one wishes to put the question, by way of cross-examination, why the new growth of trees, thus situated, is less perfect, the answer is that these trees are subject to the influence of early frosts, to which such land is liable, the growth thereby becoming suddenly checked, and the ripening of the wood prevented. On harder and more elevated soil, the growth is usually less, and more perfect; the frosts are more tardy in their appearance, and the cold of winter not so intense.

It is well known that the peach produces its fruit on the previous year's growth; and hence any injury to this must, of course, be fatal to the succeeding crops. Buds are killed, many times, where trees are not perceptibly affected. One reason doubtless is, that they are more tender, and also that they are of such a form, and so situated on the twig, as to leave them exposed on every side. For this reason they are affected by a low temperature of comparatively short duration.

It is often suggested, by writers on this subject, that trees which are frozen are not injuriously affected by any greater degree of cold. Such writers seem to take it for granted that all the evil arises from the expansive nature of frost, by which the sap vessels become injured. This may be true, but I have never seen any satisfactory reasons for the theory. An effect is produced in this way, beyond all question, but that it is the only or principal effect of severe cold, is a matter of some doubt. Heat has an expansive force—much greater than cold—but no one thinks of attributing all the summer ills of trees to this cause.

Chemists tell us that all substances are continually giving out and receiving heat. Snow, ice, and all frozen substances are non-conductors, or, what is the same thing, slow conductors. This is probably the reason why no injury is produced by severe cold of short duration. When we consider how important results follow slight changes of temperature in the warm season, it may not appear unreasonable to suppose that equally important consequences may follow similar changes at other seasons.

The settlement of this question, on the line of "fifty-four forty," or in some other satisfactory way, is a matter of no small consequence to the cultivators of fruit and fruit trees. It should be at once settled how far we may safely follow the practice of more southern cultivators, in setting peach orchards on low sandy plains. Errors in this matter of location have led many to believe that the peach cannot be grown with profit as far north as New Hampshire,—a great mistake. While some are groaning over their misfortunes and meagre crops, others seem wonderfully free both from failures and frosts.

Observation has satisfied me that seedlings are much more hardy than worked varieties. Who has ever known seedling apple trees seriously affected by the cold? W. H. H.

Plaistow, N. H., July 8, 1852.

RAISING CREAM—ARTIFICIAL METHOD.

Some time since the papers published an account of an experiment made by a Mr. Beakaert, of Brussels, to increase the quantity of cream from milk, which had, it was said, resulted successfully. It was confidently believed, by many persons, that a very important desideratum had by the discovery of Mr. B. been obtained. It is quite possible that the efforts of this gentleman may have evolved some new light upon the subject of his research; yet we question whether the rules he has promulgated in reference to the department of butter-making will after all, be found of much utility. We present his process, however, *in extenso*, leaving those who are desirous of adopting it to do so, if they choose. We would remark, however, as we go along, that it is somewhat difficult to conceive how the carbonate of soda can produce the result attributed to it, unless, indeed, it have a stronger affinity for the elements of the milk than the cream has, and thus allows the latter to separate more freely from it, and consequently from its greater levity "to rise."

"To every two quarts of new milk, a tablespoonful of a liquid made by dissolving in a quart of water one ounce of carbonate of soda, one teaspoonful of a solution of curcuma or tumeric, and three drops of marigold water."

The addition of the solution of soda, he states, causes a larger quantity of cream to rise to the surface of the milk than is procured in the ordinary process. The other ingredients are for the purpose of improving the color and quality of the butter made from the cream.

SHEEP RAISING AND SHEARING.

Our people do nothing by halves, we believe, except the cultivation of the ground; and that is because they do not see clearly yet that a thorough cultivation is cheapest and best. But as a general thing we prosecute with a rush any favorite pursuit or business. Our horses trot inside of three minutes—our oxen girt beyond all precedent—the cows fill the largest pails and make more butter than any cows that were ever created before, while the Suffolks are the widest and fattest and cost the least of any grunters that ever squealed. We have mammoth cabbages and beets, parsnips a rod long, or less, and squashes and turnips to match! With this mania upon us, it is no wonder that *some wool should be pulled* on the subject of sheep, and that such earnestness and zeal are felt in relation to them as to amount to extravagance and unjustifiable expense and risks. Still we would not suppress these buoyant and go-ahead impulses—they need tempering, but not extermination. They have set afloat our elegant steamships, built the railroads, stretched the telegraph wires; sent us into the waters of the old world with yachts that not only outstrip the genius and power of our transatlantic brethren, but the winds themselves, and enabled us to sustain the nation's skill and genius in the World's Fair!

While some are excited, others will be more cool and considerate, and occasionally apply a trig to the wheel that seems rolling too fast.

We have been led to these remarks by receiving a communication upon the subject of the late sheep shearing at Cornwall, Vt. The writer animadverts with some sharpness on the publicity given to the occasion; but we omit his strictures, believing that he will appreciate our motives, and excuse the liberties we have taken with his communication. While we admire to see the energy of a full and earnest heart in all the operations of the farm, we cannot say there is no danger of expending and risking too much in our experiments, particularly with the various breeds of animals which we rear.

The following are extracts from the letter of our correspondent:—

It is my opinion that the importers of the enormous French merino sheep are doing a bad service to our country. * * * * In the sequel, they will be universally known as a poor sheep for our climate. Their reputation must wane as did that of the Rohan potato. Of the flesh of these, few, if any, have yet tasted to know its excellence. But to wool growers I would say, these are not the best sheep. Even the wool of the famous buck Napoleon, of eighteen months growth and of forty-seven pounds weight, (allowing his body after shearing to weigh three hundred pounds, which I have to guess at) is only a little more than half what it should be, to equal the last year's fleece of Mr. Holliston's Atwood Buck, of Marshfield. This fleece being of twelve months growth minus four days, and weighing in the proportion of one pound of washed wool to five pounds of carcass. And I am informed, that Mr. Campbell, of Westminster West, the late importer of French and Silesian Merinos, took a fleece from one of his small Silesian ewes, last year, which, in proportion to the weight of carcass, was superior to that of Mr. Holliston's buck. I saw in April last, some six or eight half-blood French yearlings, which had been wintered on hay with many other lambs, and while the others looked well, these French half-bloods were only in middling condition. I was assured by the intelligent owner that they were from good hardy ewes, and had no apology for their inferior condition, but that of their French blood. Another friend had the privilege of the second best buck from a flock of half-bloods. He wintered him with his hardy Merinos; but his condition was inferior. These experiments have some weight. But every judge of sheep on seeing the French Merinos, without any experiments should come to the conclusion, that with common keeping they must pass for less than a middling sheep, and on poorer fare, such as our hardiest sheep can withstand and yet keep up a tolerably respectable appearance, they would hardly subsist. Our farmers should understand that those sheep are most profitable which require no higher food to keep them in good condition, than good pasture in the summer and good hay in winter. There are large flocks of moderately sized sheep in Vermont, the ewes of which average more than four pounds of well-washed wool, yearly, without being grain fed. Such are the Jarvis and Atwood sheep, and others not widely differing. The Merino flock of Messrs. Dort, and Lee Eastman, of East Rupert owing to the great and long practical care and skill of those gentlemen in breeding, are, I believe, unsurpassed.

PRO BONO PUBLICO.

Windsor County, Vt., June 25th, 1852.

SALT YOUR HAY.

About as much salt applied to the hay on placing it away, as the cattle would naturally eat during the time they are consuming the hay, gives it a relish which is very agreeable to the stock. Besides, hay keeps better with two or three quarts of good salt applied to the ton. Hay that is not cured thoroughly is much improved by it. Try it, alongside with that not salted, and observe whether there is a difference. You will then know next year whether it is a waste of salt or not to apply it to hay.

THE POTATO BLOSSOM.—The potato blossom this season is unusually large and handsome. It has been stated to us that whenever the potato crop has been attacked with the rot the previous blossoming has been small and meagre. Is it so?—whose observation has been directed to this circumstance?

The potato blossom, by the way, is no mean flower. Skilfully arranged and pressed with the potato leaf, in an herbarium, we have known it to puzzle many an ardent lover of flowers to tell what it was.

SWARM OF INSECTS.

Messrs. Editors:—In the *New England Farmer* of June 12th, I noticed an article describing an uncommon swarm of insects. The numbers which appeared were remarkable—the column being a quarter of a mile in width, and twenty feet in thickness, comprising, in the language of the writer, "countless millions."

The insect alluced to, doubtless belongs to the order *Neuroptera*, which includes the Dragon-fly, May-fly, Day-fly (*Ephemera*,) &c. This was probably the May-fly, called in some sections the Shad-fly. In answer to the question, "Where did they come from?" it may be said they came from water, where they, (as do many other tribes,) pass their first stages, including the egg, larva and pupa. When they have reached the perfect, or fly state, they leave the water, and after preparing for a new generation, die.

It is not often that so many are seen at once, as mentioned in the article referred to, though they are often seen in large numbers near still water, which is favorable to their propagation. The reason that they appear and vanish so suddenly, is, the periods in which they pass through the various stages are very exact. The eggs are all produced nearly at the same time—are all probably deposited in the space of two days—the larva are all hatched together, and reach the point of maturity together, and of course appear in the winged state at the same time. The same thing is observable, more or less with most insects.

The fact of the insects all going in the same direction, as mentioned—to the southwest—I will not undertake to explain. Precisely the same thing fell under my own observation in regard to the same insect, about twenty years ago.

There is something mysterious in these flights of insects, and also in the migrations of some of the smaller animals. Locusts, or grasshoppers, frequently go off suddenly, taking to the air all at once, and all flying in the same direction. Many years ago a remarkable flight of the Dragon-fly (*Libellula*) was noticed from Massachusetts to Pennsylvania. Innumerable hosts of them filled the air for the space of an hour or more. They passed to the west, their course inclining a little to the north.

Grey squirrels, when they have been very abundant in a district, often go off in one direction, travelling day and night with great speed, swimming streams and even broad lakes, and crossing all obstacles, so far as practicable, that obstruct their line of march.

Who can explain this impulse?—*Boston Cultivator.*

Remarks.—Since writing the article which called out the above remarks, we have seen another exodus of the same insects, in countless numbers, travelling in the same direction, and still intent of being *somewhere very soon*, as the others were; but they appeared about 5 o'clock in the afternoon.

☞ The *Rural New-Yorker*, published by D. D. T. Moore, the man who knows how to make five hundred blades of grass grow where *none* grew before, is just as bright and beautiful as ever. No wonder the ladies fall in love with it, and will have it.

Mechanics' Department, Arts, &c.

VENTILATED CARS.

The following is a more particular description of the new invention for keeping cars free from dust, than we have before seen. It is condensed from a description by the *Hartford Times*. If cars can be constructed so as to be free from dust, the greatest of annoyances of railroad travelling will be obviated:

"The invention consists, first, in a row of three large circular ventilators placed in the top of the car at equal distances apart, and flaring open so as to catch a great deal of air from the rapid motion of the car. At the height of the ventilators there is not much dust, as it does not generally rise so high in any considerable quantity, but what little enters them is caught and deposited in a reservoir partly filled with water and ingeniously attached to the bottom of the ventilator. The air thus purified from dust and cinder, rushes into the car through the ventilators, in consequence of the rapid motion. To make the arrangement still more effectual, the windows of the car have been altered, so that instead of opening perpendicularly, they open sideways like a door. Each window consists of two parts, shutting together at an obtuse angle, which projects a few inches outward from the side of the car. One part of each window is closed, and *deflects* the passing dust from the car, while the other is slightly opened inward, so as to permit a constant current of air received from the ventilators to pass out and *repel* the external dust. The invention is pronounced entirely successful by the *Times*. Mr. Paine, the water-gas man, is the inventor."

Axes.—The most extensive axe factory in Vermont is that of Brooks & Brothers, at Beman's Hollow, on New Haven River. The ordinary manufacture amounts to a hundred and twenty-five axes per day, and runs often to a hundred and fifty. It consumes a hundred and fifty tons of anthracite yearly, and eighty tons of American iron. The steel, twenty tons, sometimes ordered direct, is from the Messrs. Sandersons, at Sheffield. Twenty-five workmen are employed, and fifty tons of grindstones are used annually.—*Brattleboro' Eagle.*

Iron Flowers.—A "fancy piece" has been prepared for the Prussian Exhibition by the Renard Works. It is a vase of polished coal, as solid as black marble, holding a large bouqet of flowers made of sheet iron—leaves, petals, and stems, all perfectly graceful and natural, but sable as night. The effect is singular—the complete imitation having not the least resemblance to nature, unless there are such blossoms on the banks of Acheron. It is Flora in mourning.

Iron Paper.—At the Prussian Industrial Exhibition, Count Renard, a large proprietor of iron works, exhibits sheet iron of such a degree of tenuity that the leaves can be used for paper. Of the finest sort the machinery rolls 7040 square feet of what may be callad leaf-iron, from a cwt. of metal. A bookbinder of Breslau has made an album of nothing else, the pages of which turn as flexibly as the finest fabric of linen rags. As yet

no extensive application for this form of the metal has been found, but the manager says the material must precede the use for it. Perhaps books may hereafter be printed for the tropics on these metallic leaves and defy the destructive power of insects of any color or strength of forceps. We have only to invent a white ink, and the thing is done.

SMUT MACHINE.—D. Pease, Jr., of Floyd, Oneida Co., N. Y., has taken measures to secure a patent for an improvement in smut machines, which consists in spreading the grain in a superior manner to other smut machines, and regulating the spread of the grain by an adjustable top, so as to allow of the machine acting upon the grain in a very superior manner.—*Scientific American.*

Ladies' Department.

GOOD BREAD.

Mr. Weed writes to the *Albany Evening Journal*:—"We could learn one lesson from Austria with great advantage to our people. This is the art of making good bread, which, being as it is here, universal, is really a great national blessing. We were struck first at Trieste with the fine quality of bread at our hotel. At all the eating-houses between Trieste and Vienna we remarked the excellence of the bread. Here we enjoy the same luxury. Nor is it a luxury for the rich alone. The same light, sweet bread is in all the bake-shops at prices which enable all classes to purchase. England has contrived humanely to give 'cheap bread' to her people; but Austria affords it still cheaper and of an excellent quality. I do not know as this secret for making good bread can be communicated. Perhaps it is owing to some peculiarity in the flour, or in the water; but I do know that the art of making for the American people such bread as is eaten throughout Austria, would be of incalculable value. A Vienna baker who should go to the city of New York and vend such bread as we get here, would be able to ride in his coach and reside on the Fifth Avenue in two years. That is, providing Yankee bakers did not find out his secret."

SIMPLE REMEDIES.

At this season, we shall do our patrons a service by laying before them two very cheap and simple remedies.

Dysentery often proves fatal. It can easily be stopped by applying proper astringents. A preparation of creasote is getting to be a common remedy among physicians; but it is dangerous stuff. The best remedy is parched rice—burned like coffee. After it is well browned, cook it by boiling in the usual way, and let the patient eat of it. It digests in an hour, and therefore has a tolerably quick effect.

For *Costiveness*—a thing that leads to painful and often fatal diseases—there is no better laxative than salt (chloride of sodium) dissolved in water. Take a glass of warm water and dissolve a teaspoonful of salt in it, then cool with ice, and drink it off. To empty the contents of the bowels, it is the safest and best ecphratic known. It does not disturb the mucilage of the intestines, and causes no pain or weakness.—*Crusader.*

LACE.

Mr. Weed, in one of his agreeable letters from Europe, gives the following notice of the mania for fine lace which is conspicuous among the forms of modern extravagance:

"The ladies visited the principal Lace Manufactory, where the Brussels article is made and sold for sums of money that would frighten prudent people. What do you think, for example, of trimming a dress with lace at $250 and $300 a yard! But just now the rage is for old lace. In Florence, Rome, Naples, Venice, &c. &c., traffic in old lace is very active. Ladies look for it with more solicitude than any other article of dress. Neither jewelry nor precious stones are so much prized as lace known to have been worn by a cardinal or monk a century or two ago. No lady thinks of leaving Italy without securing some of their precious spoils. Of course, the supply of *old lace* keeps pace with the rapidly increasing demand! How much of it is *genuine* I will not undertake to say. Every lady is quite sure that she can detect the antique from the modern."

☞ Dr. Franklin, in speaking of education, says, "If a man empties his purse into his head, no one can take it from him."

Boy's Department.

GET UP BEFORE THE SUN.

Get up before the sun, my lads,
Get up before the sun!
This snoozing in a feather bed
Is what should not be done.
Between sunrise and breakfast, lads,
Rise, breathe the morning air,
'Twill make you look so bright, my lads;
'Twill make you look so fair.

Get up before the sun, my lads—
Shake off your sloth—arouse!
You lose the greatest luxury
That life has, if you drowse,
Between sunrise and breakfast, lads;
Arise, then, do not lose
The key to health and happiness,
By lying in a snooze.

Get up before the sun, my lads,
And in the garden hoe,
Or feed the pigs, or milk the cows,
Or take the scythe and mow;
'Twill give you buoyant spirits, lads,
Give vigor to your frame—
Then rise before the sun, my lads,
And these rich blessings claim.

THE STORKS AN EMBLEM OF FILIAL AFFECTION.—The storks are birds very much venerated in the East on account of their love for their parents. These birds are said to take care of their parents when they become old and lose their feathers, so that they cannot fly. They hover over them when exposed to cooling damps, drive off all their enemies, bring food for them, and when, on the wing, their aged mother tires, they bear her on their own back.

"The stork's an emblem of true piety;
Because, when age has seized and made his dam
Unfit for flight, the grateful young one takes
His mother on his back, provides her food,
Repaying thus her care of him,
Ere he was fit to fly."

Agricultural Gleanings.

Farming in California. Much attention appears to be paid to farming in California, and the prices paid for produce must make it a profitable investment of time, labor and money. 100,000 acres are said to be under cultivation in the State; and so well does it pay, it is expected that three times as much will be cultivated next year. Orchards and vineyards are growing, and the fencing in of land and reclaiming is proceeding steadily. In regard to tools, the *San Francisco Current* says: "The agricultural implements heretofore imported have in many instances been unsuited for use, and rendered alterations necessary, to meet the peculiar conditions of this soil and climate. This has induced the local manufacture of tools, which is now extensively carried on."

Agriculture in Germany.—A traveller by railroad from Dresden to Hanover on the 18th of May, gives the following description of the appearance of the fields on the route of his day's journey:

"The country through which we passed is smiling in all the luxuriance of spring. The fields of *rape*, glowing on all hands with their blossoms of intense yellow, looked as though columns of butterflies had settled down upon them. Most of the lamp oil used in Germany is made from the rape seed. Later in the season, the fields of poppies unfold their blossoms of blushing red. From these seeds an oil of better quality is expressed, used for the table and for other purposes. Poppy seeds are also an important ingredient in some of the varieties of cake, so abundantly produced in the German cuisine."

A Maryland Farmer.—The Easton (Md.) *Star* says, that Col. Edward Lloyd, of that county, with his own servants—numbering near four hundred—some nine or ten farms—about 6,000 acres of land, including timberland, raises annually between 30,000 and 40,000 bushels of wheat, and a much larger quantity of corn; besides various other valuable products. Besides these extensive operations in Talbot, he has a plantation carried on in the State of Mississippi, worth several hundred thousand dollars, and his annual income cannot fall short of $150,000. His residence is one of the most splendid in this country, and has been the homestead of the Lloyd family since their first settleme .. in Maryland.

Whiskey-Fed Horses.—Some of the horses employed on the Harlem railroad may have been noticed as having a peculiarly "hard look," and a few may be considered as regularly installed into the fraternity of "bruisers." It appears that during this warm weather they are each in the habit of taking their "drop" of whiskey and water, in order to better qualify them for labor. This mixture is regarded as an improvement on the usual beverage of horses in its native state, and as protecting the animals from the effects of the sun. Wait a while, and you shall know whether this opinion is correct. For ourselves, we very much doubt its correctness.—*N. Y. Jour. Commerce.*

Potato Crop.—From present indications, we shall have but few if any potatoes, this season, in our vicinity, as within the last week the most extensive ravages have been committed by a long dark insect, which appears in myriads, and is known here as the potato bug. They make quick and certain work of it, and the opinion is that where they have commenced operations there will be no vestige left.—*Fishkill Standard, July* 15.

Grape Culture.—There are at least 1,200 acres of vineyards around Cincinnati alone, giving employment to no less than 600 efficient laborers, at an annual cost of $20,000, and producing, in moderately favorable seasons, 240,000 gallons of wine. Most of those engaged in the culture of the vine have families to support. It is calculated that the wine interest in Hamilton county affords subsistence, directly and indirectly, to 10,000 industrious and sober people.

Haying Tools.

1000 *dozen superior Grass Scythes.*

PHILLIPS, Messer & Colby's—Darling's—Farwell's—Mansfield & Lamb's—Keyes & Dunn's.
Also, Lawn, Grain and Bush Scythes, of the best quality.

1000 *dozen Scythe Sneaths.*

Patent Grass, Lawn and Bush Sneaths, from the best manufacturers in the country.

2500 *dozen Hay Rakes.*

Hall's, Simonds's, Carpenter's, Page & Wakefield's, Robinson's, Duggan's and English best Hand Rakes.

500 *Drag Rakes.*

This Rake is a hybrid between the Hand and Horse Rake; every good farmer should have one or more.

3000 *dozen Scythe Rifles.*

Clark's celebrated Whetstone Grit and Emery Rifles. Also, Austin's, Anson's, Willard's, and others.

200 *gross Scythe Stones.*

Quisebaug, Chocolate, Norway Rag and Indian Pond; also, Woodward and Talacre (English) Scythe Stones.

20 *tons Grindstones.*

A well selected assortment of the celebrated Blue Sheet, warranted. Also, Grindstones of all sizes, mounted on frames and rollers complete.
Grindstone Fixtures, viz.: Flanges, Arbors, Cranks and Rollers.

800 *Horse Hay Rakes.*

Delano's Patent, Revolving and Spring Tooth Hay Rakes; all of which will be sold at wholesale or retail, at very low prices, by RUGGLES, NOURSE, MASON & CO.,
June 15. tf Over the Market, Boston.

State Mutual Life Assurance Co.

OF WORCESTER.

GUARANTEE CAPITAL, $100,000.

Hon. JOHN DAVIS, President.

Hon. ISAAC DAVIS, } Vice
Hon. STEPHEN SALISBURY, } Presidents.

THIS Company was chartered in March, 1844, and commenced business on the first of June, 1845. Its business is conducted on the most economical principles.

The well considered and invariable policy of this Company has been to prefer the safety and mutuality of the assured to the showy advantages of a large number of policies, and an imposing amount of receipts. California risks have been uniformly declined, and the multiplication of policies in cities considered especially liable to cholera has not been encouraged.

The cash premiums of this company are calculated on the most approved tables of the probability of life, and at the lowest rates which are deemed safe.

Pamphlets, explaining the principles and advantages of life assurance, with forms of application and rates of premium, may be had by application at the Office of the Company in Worcester, or of the Agents in all the principal towns in New England. CLARENDON HARRIS, Secretary.

Dec. 27, 1851. 1stf*

Pure Devon Stock.

COWS, HEIFERS, BULLS and BULL CALVES for sale.

Apply at Office of N. E. Farmer, or to the subscriber.

B. V. FRENCH,
Braintree, Mass.

Dec. 27, 1851. 1yr*

Mexican Guano.

A NEW ARTICLE is now offered to the Agriculturist and Dealers, under the above name, from its having been found near the Mexican coast. It has been analyzed by C. T. Jackson, M. D., State Assayer, Boston, Dr. David Stewart, of Baltimore, and others. Dr. Stewart says it contains the largest proportion of Phosphates he has ever met with in Guano.

The following are the result of the analysis made by C. T. Jackson, M. D.:

Water	23.40
Vegetable Matter	15.80
Soluble Salts (in Water) Phos. Soda	0.12
Phosphates of Lime and Magnesia	60.50
Insoluble Matter (Selex)	0.10
	99,92

The quality of this Guano as a rich fertilizer, and the great reduction in price compared with the Peruvian, is such as to render it an object for the agriculturist and dealers to buy and give it a trial. It has been tried in the vicinity of Norfolk, Va., and much approved by the Farmers, those who are now buying and using of it freely. It may be obtained in lots to suit purchasers of A. D. WELD, 127 State Street, PHINEAS SPRAGUE & Co, T Wharf, or of P. A. STONE, who is the importer, and may be found at 15 Crescent Place, Boston, where also other information may be obtained respecting it. It is also for sale by Parker & White, 8 and 10 Gerrish Block, Blackstone Street, D. Prouty & Co., 19 North Market Street.

March 27. tf—*

Albany Drain Tile Works,

No. 60 LANCASTER STREET,—West of Medical College.

THE subscriber has now on hand, and will furnish to agriculturists, Horse Shoe and Sole Tiles of the most approved patterns, suitable for land drainage, of a superior quality, of over one foot in length. Horse Shoe Tile 2½, 3½ and 4½ inches calibre, at $12, $15 and $18 ₱ 1000 pieces. Sole Tile 2½ and 3½ inches calibre, at $12 and 18 per 1000 pieces. They are so formed as to admit water at every joint, draining land from 12 to 20 feet each side of the drain, being the cheapest and most durable article used. The great importance of thorough drainage is daily becoming more apparent.

Orders from a distance will receive prompt attention.

Albany, N. Y., April 10. 12w—*6 JOHN GOTT.

Carrot and Turnip Seed.

WE HAVE FOR SALE,
1000 lbs. Orange Carrot Seed;
500 lbs. Yellow Ruta Baga Turnip Seed;
500 lbs. White Flat Turnip Seed.
Also, 200 lbs. Mangel Wurtzel Beet Seed;
100 lbs. White Sugar Beet Seed;

All of which were grown expressly for us, and are of the best quality. RUGGLES, NOURSE, MASON & CO.,

May 29. tf* Over Quincy Market, Boston.

The Farmers' Library.

JUST RECEIVED, the following assortment of Agricultural and Horticultural Books, embracing the standard works of eminent American and European writers, on the Farm, the Orchard, the Garden, &c. &c.

	PRICE.
American Farm Book, by Allen,	$1,00
Farmer's Treasure, by Faulkner and Smith,	75
Dana's Muck Manual,	1,00
Prize Essay on Manures, by Dana,	25
American Muck Book, by Browne,	1,00
Lectures on Practical Agriculture, by Johnstone,	75
Elements of Scientific Agriculture, by Norton,	50
Principles of Agriculture, by Thaer,	2,50
Practical Agriculture, by Johnstone,	75
Agriculture for Schools, by Blake,	1,00
Catechism of Agriculture and Chemistry, by Johnstone and Norton,	25
American Agriculturist, by Allen,	1,00
Liebig's Complete Work on Chemistry,	1,00
Farmer's and Emigrant's Hand Book, by Marshall,	75
Home for all, by Fowler,	50
Book of the Farm, by Stephens and Skinner,	4,00
Cottage and Farm Houses, by Downing,	2,00
Downing's Country Houses,	4,00
Rural Architecture, by Allen,	1,25
Downing's Landscape Gardening and Rural Architecture,	3,50
Downing's Cottage Residences,	2,00
Fruit Garden, by Barry,	1,25
Complete Gardener and Farmer, by Fessenden,	1,25
Bridgeman's Gardener's Assistant,	2,00
Bridgeman's Kitchen Gardener's Instructor,	50
American Fruit Culturist, by Thomas,	1,00
Gardener and Complete Florist,	25
Florist's Guide, by Bridgeman,	50
New England Fruit Book, by Ives,	50
Youatt and Martin on Cattle, by Stevens,	1 25
Rose Culturist,	38
Johnson's Gardener's Dictionary, by Landreth,	1,50
Rural Economy, by Boussingault,	1,00
American Rose Culturist,	25
Bigelow's Plants of Boston,	1,25
Genera of Plants of the U. S., by Gray, 2 vols.	12,00
Gray's Botany,	2,00
Parnell's Chemistry,	1,00
New England Farmer, by Cole,	1,00
Ladies' Guide and Skilful Housewife, by Mrs. Abel,	25
Hive and Honey Bee, by Richardson,	25
Bee Keeper's Manual, by Miner,	50
Bird Fancier, by Browne, paper 25 cents,	50
Townley on Bees,	50
American Poultry Yard, by Browne,	1,00
American Poulterers' Companion, by Bement,	1,00
American Fowl Breeder, by Moore,	25
American Herd Book, by Allen,	3,00
American Shepherd, by Morrill,	1,00
Domestic Animals, by Allen,	75
Diseases of Animals, by Cole,	50
Hints to Sportsmen, by Lewis,	1,25
Dadd's Anatomy and Physiology o fthe Horse,	1.00
Mason's Farrier and Stud Book, by Skinner,	1,25
Management of Sheep, by Canfield,	1,00
Youatt on the Pig,	50
Knowlson's Complete Cow Doctor,	25
Horse Doctor,	25
Guenon's Treatise on Milch Cows,	38
Treatise on Hot Houses, by Leuchars,	1,00
Allen on the Grape,	1,00
Loudon's Encyclopædia,	10,00
Schenck's Text Book,	50
Breck's Book of Flowers,	75
Downing's Fruit and Fruit Trees,	1,50

For sale at the Publishers' prices by RUGGLES, NOURSE MASON & Co., Quincy Hall, (*over the Market*,) Boston.

April 3, 1852. tf*

Garden Seeds.

WE respectfully solicit the attention of purchasers of GARDEN SEEDS to our extensive stock, which we offer for sale. We have all the sorts of Vegetable Seeds that have proved worthy of cultivation; also, Grain, Grass and Flower Seeds. All the varieties are raised and selected expressly for our trade, and we do with confidence recommend them to all who desire to procure seeds that will prove true to their names.

☞ Catalogues gratis, on application.

RUGGLES, NOURSE, MASON & CO.,

Jan. 1. Over Quincy Market, Boston.

Bound Volumes.

BACK VOLUMES of the NEW ENGLAND FARMER, elegantly bound in Muslin, Gilt and Embossed, are now for sale at this office.

Boston, March 20, 1852 tf*

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Thorough Bred Devon Stock
AT AUCTION.

The subscriber will offer at Public Sale, on WEDNESDAY, the 3 th AUGUST, 1852, at his residence in FARMINGTON, Ct., about thirty (30) Head of Pure Devon Cattle consisting of Cows, Heifers, Bulls, and Bull and Heifer Calves.

This stock was derived principally from the herds of Geo Patterson Esq., of Maryland; R. S. Colt, Esq , of New Jersey; the Messrs. Huribut, of Winchester, and from imported stock, and have been bred with a particular reference to their dairy qualities. All Cows and Heifers offered are or will be previous to the sale, in calf to my Prize Bull Prince Albert, a descendant of Geo. Patterson's celebrated imported Bull Eclipse, and my Prize Cow Victoria, which was awarded the first premium in 185 , at Albany, in the class of foreign stock, and was sold at the same time for $180 to C. B. Cook, Esq , of Charlotte, Vt.

Catalogues giving a particular description of each animal, with their pedigrees, can be had at the offices of the principal Agricultural Journals, or on application to me by mail, or otherwise. The sale will take place at 12 o'clock A. M , the 25th inst., and the stock will be ready for examination at 10.

I will also offer at the same time and place, my Superior Morgan Stallion Young Gifford, 5 years old; a Colt of the celebrated old Gifford Morgan and from a Morgan Mare.

Also, a Morgan Filly, 1 year old the 12th day of May last, by the above horse and from a fine Morgan mare, bred by Ambrose Arnold, Esq., Westminster, Vt , "a superior colt."

☞ Terms made known at the sale.

WM. L. COWLES.

Farmington, Ct , July 10th, 1852. 7w*

Suffolk Pigs.

Those who wish to procure SUFFOLK PIGS for breeders, (warranted pure and very fine,) can be supplied at short notice by applying at this office.

May 1, 1852. tf

For Sale Cheap,

A small Farm, in the flourishing town of Stoughton, Mass., containing about ten acres of land,—a good location for a mechanic. The land consists of three or four acres good tillage,—the rest woodland; with an inexhaustible Granite Ledge, which has been worked for the past three years. There is a good dwelling house, and stable, and other out-buildings on the premises which have been built about three years. Also, a good well of water, and a number of fruit trees.

The place is within 2½ miles of three Railroad Depots, at Stoughton, East Stoughton and West Randolph. $600 of the purchase money can remain on mortgage 3 or 4 years if desired.

For further information inquire of the subscriber on the premises. ENOCH DICKERMAN.

July 10, 1852. 3m

Horse Empire State.

This splendid Horse, which was the admiration of all who saw him last season, has again made his appearance, and will be kept at MATHES' STABLE, ROXBURY, for the improvement of stock.

Said horse is of the Messenger and Durock stock, and is of a beautiful jet black color, weighs 1150 lbs., and is thought by competent judges to be the handsomest, fastest and best entire horse in New England.

Roxbury, April 24, 1852. tf

NEW ENGLAND FARMER

Is published on the first of every month, by JOHN RAYNOLDS and JOEL NOURSE, at Quincy Hall, South Market St., Boston.

SIMON BROWN, Editor.

FREDERICK HOLBROOK, } Associate
HENRY F. FRENCH, } Editors.

☞ Terms, $1,00 per annum in advance.

☞ All subscriptions to commence with the volume, Jan. 1.

The FARMER, is devoted *exclusively* to Agriculture, Horticulture, and their kindred Arts and Sciences; making a neat volume of 576 octavo pages, embellished with numerous engravings. It may be elegantly bound in muslin, embossed and gilt, at 25 cts. a volume, if left at the office of publication.

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NEW ENGLAND FARMER, (WEEKLY,)

An Independent Agricultural Family Newspaper.

The News and Miscellaneous departments under the charge of WILLIAM SIMONDS, will include a full and careful report of the news of the Markets, and the news of the week, such as Domestic, Foreign and Marine Intelligence, Congressional and Legislative proceedings, Temperance and Religious intelligence, and a general variety of Literary and Miscellaneous matter, adapted to family reading, comprising more useful and valuable reading matter than any other Agricultural Newspaper published in New England. Everything of a hurtful or even doubtful tendency will be carefully excluded from its columns.

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The monthly contains nearly the same matter as the Agricultural department of the weekly.

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For any distance not exceeding 50 miles 5 cents *per year.*
Over 50, and not exceeding 300 miles..10 cents *per year.*

Over 300	"	"	1000.....15	"	"
Over 1000	"	"	2000.....20	"	"
Over 2000	"	"	4000.....25	"	"
Over 4000	"	"	30	"	"

To prevent any misunderstanding, we quote the 16th section of the law of 3d March, 1845, which is as follows:

SEC. 16. And be it further enacted, that the term "Newspaper," herein before used, shall be, and the same is hereby defined to be, any printed publication, issued in numbers consisting of not more than two sheets, and published at short stated intervals of not more than one month, conveying intelligence of passing events, and *bona fide extras* and *supplements* of such publication.